HULL INSURANCE AND PROTECTION AND INDEMNITY INSURANCE OF COMMERCIAL FISHING VESSELS

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EXPLANATORY NOTE

The series embodies results of investigations, usually of restricted scope, intended to aid or direct management or utilization practices and as guides for administrative or legislative action. It is issued in limited quantities for official use of Federal, State or cooperating agencies and in processed form for economy and to avoid delay in publication.

United States Department of the Interior, Fred A. Seaton, Secretary
Fish and Wildlife Service, Arnie J. Suomela, Commissioner

HULL INSURANCE AND PROTECTION AND INDEMNITY INSURANCE OF COMMERCIAL FISHING VESSELS

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PREFACE

The problems of the commercial fishing industry with marine insurance are complicated and controversial. There have been complaints from the fishing industry particularly in New England, that the cost of insurance has risen substantially. On the other hand, many insurance firms have withdrawn from the field because of disastrous loss experience.

This survey is an inquiry into the situations, forces, conditions, and factors which have given rise to the hull and protection and indemnity insurance problem in the New England, Gulf of Mexico, and California Areas. It is a piece of basic research aiming at the formulation of a set of recommendations which may become the basis for policy-making decisions by the United States Government.

The report consists of two parts each in a separate publication. A summary of conclusions and recommendations, an extensive discussion of the insurance problem and two appendices which contain the basic tables and a summary of sampling techniques are included in this publication. A supplement contains a description of accidents, the owner's reasons for insurance coverage, and his occupational activities together with comments made by the interviewed vessel owners on the hull and protection and indemnity insurance problem. A limited supply of the supplements is available and will be furnished to inquirers with a specific interest who make a request for it.

The survey was sponsored by the Fish and Wildlife Service of the United States Department of the Interior under a Saltonstall-Kennedy Act research contract. The major researchers and authors of this report are deeply indebted to Dr. Richard A. Kahn, Mr. Walter H. Stolting, and Mr. Noriar Pahigian of the Branch of Economics in the Bureau of Commercial Fisheries, United States Fish and Wildlife Service for their cooperation. Gratitude is also expressed to the two advisors for the study, Dr. Ralph H. Blanchard, Professor of Insurance at Columbia University, and Dr. Donald J. White, Assistant Dean at the College of Business Administration of Boston College, for their consultation services in the various stages of the project. A great deal of the credit should go to Dr. James W. Kelley, Professor of Economics and Director of the Bureau of Business Research in the College of Business Administration of Boston University, for his assistance in the capacity of advisor and administrative coordinator of the project and for his unlimited patience in the twenty-five months of research effort.

The contribution of the field supervisors, Professors David J. Ashton, Robert M. Campbell, Myles S. Delano, Francis S. Doody, and Albert Thompson is by no means less appreciated. A list of names of the research staff and field workers appears in the supplement. Our thanks are extended to all of them and to Mr. Lloyd C. Peterson and the staff of the IBM Laboratory at Boston University. Two persons, however, deserve special mention: Mr. Gerard C. St. Laurent, for supervising the sampling and for editing of the interview schedules and Mr. Clarence L. Sackett for his typing. Finally, it is admitted that without the cooperation of the interviewed vessel owners, insurance agents, and insurance companies, the project could not have been conducted at all.

Although help came from many directions, the reliability of the data, the errors or omissions, in this report, as well as the opinions expressed and the conclusions reached, are our own full responsibility.

Boston, Massachusetts
July, 1957

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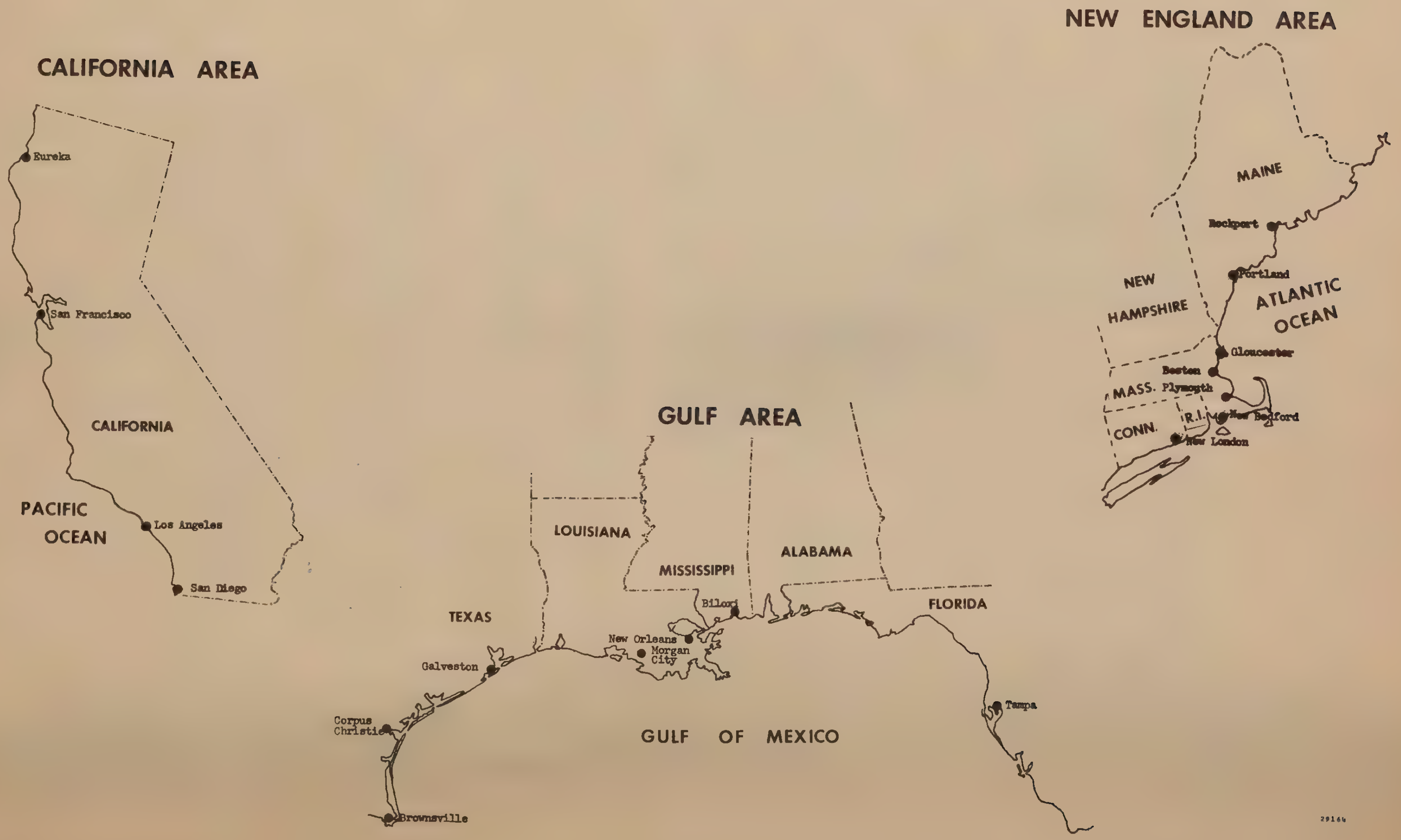
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SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS[1]

This is a resumé of the most important conclusions which were reached by a systematic analysis of the commercial fishing vessel insurance problems in the New England, Gulf of Mexico, and California Areas. These areas were selected for analysis because of severe insurance difficulties encountered by owners of commercial fishing vessels in New England and California and the extensive practice of non-insurance in the Gulf of Mexico Area. On the basis of the information assembled, a number of conclusions are arrived at which throw light on the fishing industry's insurance problems. Besides the recommendations made to the United States Government, this summary also includes a number of recommendations to each of the two business groups which are concerned with the insurance problem.

A. CONCLUSIONS

The major situations, conditions, forces, and factors which were related or gave rise to the insurance problem are presented here under the following headings: noninsurance, the cost of insurance, the loss experience of insurance, the record of accidents, the vessel as an insurable risk, and the effect of insurance rating and practices on loss experience.

1. Noninsurance. During the five-year period under study, 1950-54, it was found that approximately 30 percent of active vessels in New England were not insured for hull and about 32 percent were not insured for protection and indemnity. Noninsurance in the Gulf of Mexico Area (hereafter referred to as the Gulf Area) was the highest of all three areas with about 57 percent of the active vessels without hull insurance coverage and 88 percent without protection and indemnity insurance. The extent of noninsurance in California lies between the experience of the other two areas with 50 percent of active vessels noninsured for hull and 53 percent noninsured for protection and indemnity.

In terms of gross tonnage and current market value of vessel, however, noninsurance is less extensive in all three areas. By these terms, noninsurance on hull is only 11 and 9 percent respectively in New England, 11 and 13 percent in California and 43 and 36 percent in the Gulf Area. Similarly low percentages apply to noninsurance for protection and indemnity risk in New England and California, although in the Gulf Area it amounts to 80 percent on a tonnage basis and 76 percent on a market value basis.

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[1] The conclusions and recommendations in this report are those of the authors and are not necessarily concurred in by the United States Fish and Wildlife Service.

Noninsurance, as a means of minimizing out-of-pocket expenses of operating a commercial fishing vessel, may be an indication of unsound business practices. If the saved premium is larger than the losses sustained during a period of years, the realized gains together with other imputed costs, (managerial salaries, depreciation and borrowed capital) if not properly estimated, may lead to a false sense of prosperity. This situation may prolong the existence of inefficient fishing vessels and overcapacity in the industry to the disadvantage of all fishing operators. Contrastingly, if the saved premium is much less than the sustained losses, disaster hits the noninsured owner with the maximum severity while the adjustment of the industry's overcapacity to demand is carried out in the most disadvantageous way for the economy.

The sum and substance of the occurrence of noninsurance, seems to revolve around two pivotal points quite prevalent among small vessel owners. One is the realization that the premium for insurance protection is a postponable semifixed cost of fishing operations. The other is the lack of understanding, of the meaning of insurance protection and the principles which govern insurable risks. Insurance protection as a semifixed cost is regressive, inversely associated with gross receipts from fish landings. As a postponable expense, noninsurance is intimately related to small scale fishing operations, which may be marginal or submarginal and to the general economic conditions and basic structure of the fishing industry. The second pivotal point, namely lack of understanding, emanates from the owner's cultural, traditionalistic background and his lack of training in modern business practices. Lack of understanding largely explains his attitude toward insurance business and his notion that payment of premium is merely a costly prepayment of expected losses.

A self-insurance plan becomes more and more advantageous the larger the premium required for insurance protection, but our inquiry did not disclose extensive use of self-insurance. In fact, no vessel owner in the sample was found to operate a fleet large enough to enable him to self-insure against all insurable risks. A limited and well administered self-insurance plan, however, coupled with excess insurance placed with private risk carriers deserves the attention of both the vessel owners and the insurance people.

Noninsurance reduces the number of risks to be insured and therefore limits the operation of the law of averages. Moreover, apart from the widely accepted belief that insurance by itself has the tendency to increase the hazard, there are a few indications that the majority of noninsured vessels, especially in the Gulf Area, may be better risks than the currently insured vessels. To the extent that this may be true, a plan inducing noninsured owners to carry insurance on their vessels may finally lower the cost of insurance protection for all. Although theoretically correct, this observation is subject to various qualifications.

2. The cost of insurance. In terms of gross premium, protection against hull insurance accidents rose during the years 1950-54 from $2,225 to $2,820 per policy in New England; from $1,008 to $1,218 in the Gulf Area; and averaged from $6,242 during the first two years, 1950-51, to $6,432 in the last three years, 1952-54, in California. In terms of coverage, the rise of insurance cost was equally, if not more, important than the rise in gross premium.

Comparison of insurance cost between areas disclosed that the rise in cost was greater in New England and less pronounced in the Gulf Area and California. But in terms of premium per hundred dollars of insurance the average hull insurance cost during the five-year period was higher in California than in the other areas, with the Gulf Area probably occupying the second position, followed closely by New England.

During 1950-54 the average gross premium per policy for protection and indemnity increased from $1,425 to $2,543 in New England, from $436 to $485 in the Gulf Area, and from $378 to $717 in California. In absolute terms, protection and indemnity insurance is costlier in New England than elsewhere.

Finally, the cost of insurance in terms of gross premium and coverage may not always measure fully the financial burden which falls upon the owner of a commercial fishing vessel. Interest charges and other costs incidental to the carrying of insurance may make the cost of insurance more burdensome. Furthermore, the cost of insurance is mostly felt when other operational costs are also rising and receipts from fish and shellfish landings are falling.

3. Loss experience of insurers. According to our best estimates, during the period 1950-54 the paid losses and adjustment expenses for hull insurance averaged from 71 to 76 percent of earned premiums in New England, 74 to 79 percent in the Gulf Area, and 49 to 54 percent in California. This means that, on the average, insurers in the first two areas paid more in losses and adjustment expenses than the amount of their earned premium available for that purpose. In contrast,

insurers in California, on the average, were able to pay losses and expenses and realize some gains. This over-all experience, however, conceals the fact that in all three areas some insurers sustained heavy losses and ceased underwriting commercial fishing vessels; others broke even, and a few realized some profits.

Insurers underwriting vessels for protection and indemnity insurance may have sustained heavy losses in New England and heavier losses in California since, according to our best estimates, paid losses and adjustment expenses during 1950-54 averaged from 89 to 94 percent of earned premiums in New England and from 154 to 159 percent in California. Loss experience in the Gulf Area was very satisfactory, according to our sample findings and insurers' reports.

It was shown that, willingly or otherwise, the majority of insurers have sustained losses particularly for protection and indemnity coverage, to the extent that their average loss experience was higher than their break-even ratio during the period 1950-54.

4. The record of accidents. During the years 1950-54, damages to the hull of vessel were the most frequently occurring hull insurance accidents in New England and especially in the Gulf, while the most frequent accidents in California consisted of damages to machinery and equipment. Of the damages to machinery and equipment, motor trouble seems to be more frequent than damages to electrical equipment, winches, and fishing gear in all three areas. Navigation hazard, mechanical failure, and weather were the three most frequent hazards, in that order, in New England and Gulf Area, while in California, mechanical failure was more frequent than navigation hazard and weather. A multiple classification of accidents disclosed that "struck submerged object" was the most frequently occurring cause in New England and particularly in the Gulf Area, followed by "error of crew" and weather. "Wear and tear" was the most frequently cited cause in California, followed by "error of crew" and "struck submerged object." "Wear and tear" was almost as important in New England as weather, while collision with another vessel was frequent in all three areas.

In terms of amount of loss for hull insurance accidents, the adverse loss experience of insurers in New England and the Gulf Area was due to both frequency of petty claims of $500 or less and large claims of more than $5,000. In California, losses were due to large claims to a greater extent than to petty losses. Total loss of vessels contributed 39 percent of all losses in New England, 50 percent in the Gulf, and 71 percent in California, with the remaining portion shared by partial losses of active wood and of steel vessels. Although fire hazard was the least frequently occurring cause, it was the source of the largest average amount of partial loss per claim in all three areas and contributed to the largest portion of total losses in New England and the Gulf Area. Weather in New England, navigation hazard in the Gulf, and mechanical failure in California contributed the largest proportion of paid partial losses. Navigation hazard accounted for the largest part of total losses in California and was second to fire hazard in total losses in New England.

For every one hundred protection and indemnity insurance accidents, 80 in New England, and 83 in California consisted of personal injuries during 1950-54. Hand injuries were the most frequently occurring personal injuries in both areas, while in New England, organic diseases and poisoning, mainly nonoccupational in nature, were more frequent than diseases which generally may be considered occupational, such as infections and exposure.

Petty protection and indemnity insurance claims of no more than $250 each were very frequent in New England--70 percent of the total number of all claims--but less frequent in California. Contrary to the prevailing notion, only 52 percent of the total amount of all losses in New England was due to large claims of more than $5,000 each, while 83 percent of the total amount of all losses in California were the result of claims amounting to more than $5,000. The amount of losses paid for personal injuries constituted three-fourths of all losses in New England and nine-tenths in California. Hand injuries constituted the most severe personal injuries in New England, with the largest amount of loss per claim and the largest proportion of losses, while foot injuries constituted the most severe personal injuries in California. In terms of amount of losses, nonoccupational diseases--organic diseases and poisoning--were more severe than occupational ones--infections and colds or exposure.

The best constructed and equipped vessel is as good a risk as the people who man and operate it. Although somewhat dogmatic, this statement hardly overemphasizes the paramount importance of the human element as a decisive factor in the prevention and reduction of the frequency and severity of accidents. In a decided majority of hull and protection and indemnity insurance accidents, the human element underscores the physical causes which may be present. With occasional exceptions to the rule, the captain, the engineer, and the crew lack the necessary training which will help them to perform their respective duties with maximum safety, both to the vessel and themselves. But human nature manifests itself in a variety of other forms besides lack of knowledge--poor maintenance, inexcusable negligence, and even intentional destruction of property.

5. The vessel as an insurable risk. Economic conditions, the structure of the commercial fishing industry, and existing maritime legislation have adversely affected the insurability of vessels and contributed to the insurance problem in a number of ways.

The presence of conflicting interests among vessel owners and their highly diversified backgrounds seriously hinder the growth of group loyalty and cooperation. In the past, different market interests of vessel owners may have adversely affected the insurability of commercial fishing vessels.

The physical inadequacies of most vessels and the lack of knowledge of seamanship among the majority of captains are not a matter of operational cost alone but also a matter of function and practice or custom. The obvious conflict between the vessel's seaworthiness or the captain's seamanship and profitable fishing operations is an aspect of the insurance problem deserving serious consideration.

Labor shortages, poor recruiting practices, and high labor turnover in some types of fishing are also important factors in the rise of the problem in hull insurance, but particularly in protection and indemnity insurance.

It was found that the incidence of insurance has increased the hazard. There is a highly significant direct association between the occurrence of insurance and loss experience. High propensity to insure is associated with relatively unfavorable loss experience and vice versa. This situation is known to occur in other lines of insurance.

An inverse correlation between loss experience for hull insurance and fishermen's gross receipts was found in New England and to a lesser extent in the Gulf Area. Although the data in California fail to show such an inverse relationship, the close association between the occurrence and severity of accidents and economic conditions elsewhere throws abundant light on the long run forces which underlies the insurance problem. The importance of moral hazard differs from area to area and from port to port, but its probable presence is confirmed everywhere by vessel owners and insurance people alike. The vessel owner clearly understands the close association between economic conditions in the industry and the hull insurance problem. Declining income results in declining maintenance of his vessel. His business outlook is a pessimistic one. Although government assistance is welcomed by a large majority of owners and suggestions for measures to improve safety standards, rating, and adjustment of claims are numerous, the general concensus is that nothing short of measures to improve economic conditions in the industry can alleviate the hull insurance problem.

In contrast, the protection and indemnity insurance problem has its roots, on the one hand, in the onerous maritime laws, especially that part of the Merchant Marine Act of 1920 known as the Jones Act, which authorizes prosecution of vessel owner liability for accidents and other damages in the Federal Courts and, on the other hand in the attitudes and conduct of labor within the industry, especially organized labor. The paramount importance of existing maritime law, especially the Jones Act, as a single and ultimate source of the problem in protection and indemnity insurance did not escape the vessel owner's attention. Pleas for the repeal of the Jones Act and extension of workmen's compensation to fishermen are the most frequently suggested solutions to the problem.

6. The effect of insurance rating and practices on loss experience. Insurance rating, competition among insurers, and some insurance practices have contributed to the insurance problem, on the one hand by limiting the revenue of insurers and, on the other hand, by increasing the incidence of claims and claim expenses of insurers.

Whether insurers operate efficiently in estimating the expectation of loss was tested by a comparison of insurance cost of vessels rated on the basis of their loss record. Insurers differentiated between various insurable risks as far as the coverage was concerned. However, whether differentiation in terms of coverage was adequate, especially among active wood vessels, is questionable. Additionally, coverage differentials were largely offset by the premium ratio, especially between best and worst of active vessels. Relatively speaking, insurers differentiated more in terms of coverage, which determined the scope of the insurers' obligation to indemnify the insured, and less in terms of the premium ratio, which determined the revenue from which obligations must be paid. Finally, failure of insurers to differentiate between best and worst vessels is more pronounced in protection and indemnity insurance than in hull insurance.

The fact that insurance companies operated on averages and their failure to rate individual risks adequately on experience and merit is in part responsible for the substantial rise in average rates when expectation of loss increased during 1950-54.

The highly competitive state of affairs among insurers is another factor which prevented greater risk differentiation and kept the premium lower than might have been possible otherwise.

On the other hand, other factors contributed to high cost and losses for the insurers. The nature of the risk, requiring specialized knowledge in handling it, the geographical dispersion of the risk, and the presence of physical and human elements which may suddenly change the hazard, the relatively small value of the risk compared with the time-consuming process in handling it, and possible duplication in insurance services contribute to high operational costs. Besides the above structural factors, operational costs may have increased because of frequency and severity of claims during 1950-54.

In spite of serious effort, competition among insurers prevented adequate restriction of the coverage by limiting the provisions of the contract, especially by increasing the amount of the deductibles for hull and for protection and indemnity insurance. The above conclusion, however, is reached in retrospect and in view of the realities in the market.

During 1950-54 overinsurance was widely practiced in New England and, to a lesser extent, in the Gulf Area and California. Overinsurance is the combined effect of falling earnings which automatically lower the value of a vessel through the capitalization process, the pressure of the insured vessel owner, the broker's policies, and lack of internal controls between insurer and his representatives. In any case, overinsurance constitutes a serious disregard of sound and basic insurance principles. Available evidence emphasizes the importance of overinsurance as a probable factor which contributed to total losses.

Also, some imperfections in surveying vessels for both kinds of insurance, especially hull insurance, may have contributed to the insurers' losses. Evidence shows that a few vessels in all areas are not surveyed before they are insured. In the Gulf Area many surveyors are pressed to make favorable surveys since insurers have the practice of paying for their services only if the vessel is accepted.

Adjustment of hull insurance claims is a process which frequently brings to a clash the opposing interests of the insurer and the insured. It was found that resistance of the surveyor and the insurance broker to the owner's pressure and their vigilance over inflated shipyard bills are not always present or strong enough to protect the insurer's interest effectively.

The frequently unreasonable demands of injured seamen, encouraged by lawyers, doctors, and union officials with or without litigation may have contributed to higher losses and claim expenses for the insurers.

B. RECOMMENDATIONS

Three groups of recommendations follow. Some are addressed to the United States Government, a second group directly concerns the owners of commercial fishing vessels, and a third group consists of suggestions to the insurers for probable improvement of their loss experience.

1. Recommendations to the United States Government. First, the inverse correlation between gross receipts from fish and shellfish landings and the severity of hull insurance accidents may suggest that a Government policy aimed at stabilizing earnings at a given level would largely alleviate the hull insurance problem. Apart from considerations well known to the Government which make such a policy neither feasible nor expedient, the findings of the survey do not

support such a recommendation. The reader will be able to find in the report several reasons for this view. While there may be some advantages such as better maintenance as a result of higher income, the objections to such a policy are more numerous and may be summed up as follows: support of receipts from fish landings would have doubtful results, especially in alleviating the protection and indemnity insurance problem because the problem will still remain unsolved to the extent that accidents are not induced by low earnings. If the purpose of such a policy would be to prevent accidents and reduce their severity, the expected benefits are likely to be much less than the incurred cost and wholly ephemeral. In sum, the effects of an earnings-subsidy program will amount to a postponement rather than a lasting solution of the insurance problem.

Second, for similar reasons any attempt on the part of the Government to establish a reinsurance program, either for hull or protection and indemnity insurance or for both, is not advisable. Reinsurance is not a guarantee that the cost of insurance to the owner will necessarily go down. This report offers a host of indications leading to the firm conclusions that reinsurance will worsen loss experience. In addition, everyone but the owner who represents a good risk is likely to benefit from such a program. Assuming that the reinsurance program includes adequate safeguards and incentives to improve loss experience, observance of these provisions will be practically an impossibility. Finally, leading underwriters in the field of marine insurance also do not think that reinsurance is a desirable solution of the problem.

Third, any government program aimed at alleviating the insurance problem should be guided by the following general rules: (a) The program should consist of measures which are likely to improve directly the prevention of accidents and reduce their severity; (b) Government expenditures should be made as much as possible on a _quid pro quo_ basis so that the benefits which a vessel owner may derive from the program will be in proportion to his efforts to improve the insurability of his vessel; (c) the benefits of the program should be given as much as possible in terms of services rather than in direct payments to individuals; (d) expenditures should be made on measures which are likely to yield the best result for the cost involved; and (e) the program should attack the insurance problem from as many directions as possible by integrating the recommendations into a well coordinated master plan.

Fourth, in view of the physical inadequacies of the majority of commercial fishing vessels, an intensive engineering study is highly recommended. Such a study will aim at accomplishing the following general objectives: (a) survey the physical inadequacies of commercial fishing vessels from the viewpoint of navigation and safety devices;

(b) study the possible conflict between safety at sea on the one hand, and fishing operations on the other hand; and (c) establish construction and safety standards which will secure the maximum safety possible and the minimum conflict with the particular type of fishing operations in which a vessel is engaged.

Fifth, the United States Government should encourage the building of new vessels on the basis of the construction and safety specifications which the above study will establish. To the extent that this is possible, certain basic construction specifications may be mandatory and rigidly enforced.

Sixth, the owners of existing vessels should be encouraged to install the safety devices or make alterations on their vessels for the purpose of improving safety standards which the above engineering study would recommend.

Seventh, surveying of commercial fishing vessels for insurance purposes should be conducted by certified marine surveyors, and the remuneration of their services should not be contingent upon acceptance of the vessel by the insurer as practiced in the Gulf Area.

Eighth, licensing of all masters, engineers, and navigating personnel is long overdue. However, license requirements should be realistic. They should take into consideration labor shortages and other qualities of the labor force. For example, for established fishermen who do not know how to write and read, examinations should be oral, and more rigid examinations should be given to the new than to the existing personnel.

Ninth, it is recommended that commercial fishing vessels smaller than 200 gross tons should be subject to regular inspection by the United States Coast Guard. Inspection standards, however, should take into consideration the size of the vessels, their construction limitations, and the type of fishing in which each vessel is engaged. Unless otherwise arranged, the United States Coast Guard should be entrusted to perform the following additional duties: (a) to supervise the construction of new vessels according to the specifications established by the previously mentioned engineering study; (b) to observe the proper installation of safety devices or alteration on board the vessel for improving safety standards; (c) to certify marine supervisors; and (d) to license all fishing vessel masters, engineers, and navigating personnel by giving them the proper qualifying examinations.

Tenth, a broad and intensive educational program is highly recommended. Such a program should include a variety of objectives such as the following: (a) to train captains, engineers, and navigating personnel in order to help them obtain their licenses; (b) to disseminate information on the fundamentals of negotiating an insurance contract, namely the principles of insurance, the rights and obligations of the insured and the insurer, the limitations, and their importance to the insured owner, the captain, and the crew; (c) to influence the attitudes and conduct of owners, officer personnel, and crew with regard to preventing accidents and minimizing their severity; (d) to foster and encourage cooperation among owners in the insurance field and between labor and management by emphasizing the benefits which such cooperation may bring to all concerned; and (e) to disseminate information to the vessel owners on the application of sound business techniques, emphasizing sound cost accounting and depreciation methods.

Eleventh, wherever possible, the Federal Government should encourage the establishment of limited self-insurance plans and insurance cooperatives by offering free expert advice on how to operate such plans. Of course, this type of aid should be given under certain conditions which will guarantee genuine and lasting cooperation among vessel owners.

Twelfth, the demerits of the existing legislation which determines the method of setting vessel owner's liability for accidents sustained by crews were well exposed in the survey. They should be rectified by new legislation. However, further study is required. Such a study is recommended with the following objectives: (a) to estimate whether the cost of insurance to the owner under workmen's compensation would be less or more than under the present system; and (b) to consider ways and means which will make the new legislation more acceptable to the vessel owners and to the fishermen.

Thirteenth, the establishment of a system for the systematic compilation of statistical information about the loss experience of each vessel, the accident record of each fisherman, and the insurability of each vessel owner would be a long step toward the lasting solution of both the hull and protection and indemnity insurance problems. The Federal Government should encourage any effort on the part of the insurers to establish a system for the registration of accidents. In fact, the Government should underwrite part of the whole initial cost required for the establishment of such a system. The advantages which will be derived from a systematic registration of accidents can be summarized as follows:

(a) rating of commercial fishing vessels will be based more on loss experience than on other less reliable considerations (b) registration will act as a very strong incentive for the maintenance of a good record on the part of the vessel owner, the captain, and the crew; (c) loss experience will be improved and the operational cost of insurers may be reduced enough to meet the registration cost and, at the same time, result in lower premiums for the insured.

The above list of recommendations to the United States Government should not be considered exhaustive. The report itself contains basic information on the insurance problem of the commercial fishing industry which may enable the officials of the Federal Government to make their own policy decisions.

2. Recommendations to vessel owners. In their effort to meet the insurance problem vessel owners may have a number of suggestions in mind.

First, payment of premium is not merely a prepayment of expected losses.

Second, an insurer specializing in marine insurance is likely to give better service than one specializing in another field of insurance.

Third, it is advisable that the insured vessel owner inquire about the underwriter with whom the insurance broker intends to place the risk and inquire about the underwriter's standing in the insurance business.

Fourth, the cost of insurance should not be judged on the basis of the premium alone. Some other provisions of the contract may be proved to be equally important and equally costly. The best procedure for an owner might be to inquire about all the important provisions of the contract, make the deductible amount as high as he can afford, and demand a proportional reduction in the premium.

Fifth, although "shopping around may be remunerative, it is advisable that after the owner selects his insurance broker and places his insurance with an insurer having long standing and reputation in the market, he should avoid changing insurers as much as possible. Misunderstandings about the terms of the contract and the procedure required for reporting accidents are likely to be at a minimum, and the service for the settlement of claims is likely to be better.

Sxith, it is advisable for the insured owner to know in detail the exact procedure required for reporting an accident and to do everything in his power to present his claim in a manner that will leave no doubt about the nature of the accident and its true and original cause.

Seventh, unless a vessel owner sets up a reserve to meet damages to his vessel which would have been covered if he had carried insurance with a risk carrier, he is not self-insured. A depreciation reserve is not a self-insurance plan unless it provides for meeting damages to the vessel beyond the normal wear and tear of machinery, equipment, and replacement of old scrapped vessels. One serious limitation of a self-insurance plan is the fact that no vessel owner at present operates a fleet large enough to enable him to self-insure against all insurable risks. Deductibles in a sense are a kind of self-insurance which one-vessel owners may use extensively to reduce the cost of their insurance. It may be to the advantage of fleet operators to have a limited self-insurance plan and to carry excess insurance with a risk carrier. A number of fleet operators can enjoy among themselves considerable advantages by combining a self-insurance plan with reinsurance.

3. Recommendations to insurers. The following recommendations may be of some use to the insurers.

First, marine surveyors should be paid by the insurer whether the vessel is accepted or not. Otherwise, insurers who do not pay the surveyor's services unless the vessel is accepted are likely to defeat their own attempts to estimate accurately the expectation of loss..

Second, establishment of a system for the systematic compilation of hull and protection and indemnity insurance accidents is highly recommended. (For advantages of registration of accidents,see recommendation thirteen to the Federal Government).

Third, the coverage under the Inchmaree clause should be drastically curtailed and, if possible, totally eliminated from the hull insurance contract. It tends to increase the hazard by rewarding the officer personnel and crew for their incompetence or their negligence.

Fourth, the frequency of small and petty claims in New England and, to a minor degree, in the Gulf Area have contributed substantially to losses. It is advisable that the insurers provide deductible clauses in all hull and protection and indemnity insurance contracts and, at the same time, raise the amount to be deducted.

Fifth, the extensively practiced overinsurance of vessels constitutes an open violation of sound insurance principles. It is advisable that insurers increase their efforts to use the dual valuation method, revise the insurance contract annually, or employ any other method so that the amount of insurance never exceeds 80 percent of the quick sale or market value of the risk at the time the policy becomes effective.

Finally, insurers should improve their internal controls and communication mechanism with their field representatives, i.e., insurance brokers or agents, and marine surveyors.

CHAPTER I

INTRODUCTION

This introductory chapter includes a brief statement of the insurance problem, the scope of the study, methods used in conducting the study, a number of qualifications about the study and about this report, and finally, the arrangement of the material presented. Discussion of these points is considered worthwhile for purposes of orienting the reader.

1. The insurance problem. From the vessel owner's viewpoint, the insurance problem may be simply stated as substantially rising premium costs for hull and protection and indemnity insurance for the last few years. Since the premium for an insured vessel constitutes one of its major cost items for fishing operations, the insurance problem becomes part and parcel of the over-all problem of profitability in the commercial fishing industry. The fact that a considerable number of vessels are not insured for various reasons does not diminish the acuteness of the insurance problem. The risk of irreparable economic loss from accidents is always present and the risk from a suit for personal mishap is always possible, whether these risks are assumed by a risk carrier or shouldered by the vessel owner himself. The problem is equally important to the insurer because rising losses which preceded the rise of the premium have meant no profits for almost all firms, and for some insurers, substantial losses.

2. Scope of the study. Stating the insurance problem in simple terms does not in any way diminish the complexity of the problem and its many-fold aspects nor simplify the task of studying it. A systematic analysis of the problem has required a well defined research objective in order to avoid becoming lost in the maze of side issues and superficial thinking. This study was designed to inquire into the insurance problem as part of the cost of operating a commercial fishing vessel, to verify the presence and extent of such a problem, to discover the factors which have given rise to the problem, to draw a number of conclusions, and to arrive at a number of constructive recommendations which, if implemented, could help the commercial fishing industry obtain adequate insurance protection at reasonable premiums. The five-year period 1950 through 1954 was selected for the study of insurance experience. Although the sampling of individual policies was confined to this period, collection of information from other sources also covers the years 1955 and 1956. The study was confined to the New England, Gulf and California Areas.

3. Methods used in conducting the study. Lack of previous information on the subject required lengthy preliminary work for the preparation of the research design, the interview schedules and the formulation of a set of directives for a systematic study of the insurance problem. The nature of the problem and the presence of non-quantifiable factors, in the operational characteristics of the fishing industry, the structure of the insurance market and the existing legislation, made collection of information from a variety of sources imperative.

The largest body of information was obtained by interviewing personally the owners of a carefully selected sample of commercial fishing vessels and by studying the insurance files of these sampled vessels. A summary of sampling techniques appears in Appendix B.

Statistical and other information concerning the commercial fishing industry was collected from existing government and private publications. Actuarial statistics, whenever available, and other data on insurance experience were collected from leading insurance firms and also from insurance agents and brokers in each of the three geographical areas. Qualitative data were secured through informal but systematic interviewing of leading vessel owners in selected ports, fishermen, mortgagee banks, and insurance people. Finally, a great deal of unpublished material related to the subject was studied.

Drawing information from all these sources increased the thoroughness of our study by allowing greater coverage and increased the reliability of our findings by permitting comparison of data from more than one source.

4. Qualifications. In evaluating our findings, the reader should keep in mind a number of qualifications:

First, if a few gaps appear in the data (such as gross receipts from fish landings of the sampled vessels, profit or loss and major costs of operating a vessel, insurance experience of lawyers, etc.) it is not because of lack of effort on our part, but in spite of it.

Second, although no effort was spared in assuring the statistical reliability of the samples, sampling error techniques in estimating the response of the universe are of limited applicability and of much less use in the analysis and interpretation of data because of the nature of the problem under study. The samples are representative of the fishing industry but may not be considered to be probability samples.

Third, non-quantifiable factors such as the underwriter's judgment, owner-crew relations, the structure of the insurance market, and the existing legislation are of great importance in the interpretation of the data. As a consequence, a difference between two sample figures may not be significant statistically, but still may be highly indicative of important relationships. This fact is especially true where there is consistency of response to certain questions and a marked general agreement with the experience of leading insurance companies in a geographical area.

Fourth, although it can be shown that the samples are reliable, it should not be forgotten that sampling has supplied us with comprehensive statistics, not with actuarial statistics. This distinction is particularly important with regard to loss experience of the sampled insurers. Sample statistics on loss experience are indicative of the general situation in each geographical area for the period 1950-54 as a whole. Yearly deviations of sample loss experience from the actuarial statistics are likely to be more pronounced than deviations for the period as a whole. Similarly, the actuarial experience of individual insurance companies may differ markedly from the market experience indicated by the sample. Such differences clearly are due to the individual insurer's position in the market as determined by the proportion of insurance policies written by him and the adverse or favorable selection of risks during the period under study.

Fifth, this report is not an aimless compilation of a body of information about insurance experience of commercial fishing vessels in the New England, Gulf and California Areas. It is a systematic analysis of the collected information for the specific purpose stated above. Accordingly, in carrying out this objective, the report is presented under the following conditions:

a. The report is written from the viewpoint of the vessel owner who faces the rising cost for adequate insurance protection. The analysis may be useful to the insurance people in many respects, but from an individual company's viewpoint it may not be adequate in all respects.

b. The general experience is analyzed in this report rather than a particular portion of the problem such as the insurance problem in a specific fishing port or the experience of a specific insurer.

c. Our findings and recommendations are addressed to the United States Government for the purpose of laying down the foundations for policy-making decisions. Therefore, the report is neither designed nor written for popular consumption.

d. Finally, our conclusions and recommendations are based entirely on a painstaking and systematic analysis of the quantitative data and nonquantifiable information (published and unpublished) which were assembled during the course of the survey. Whether these recommendations should be carried out in whole, in part, or not at all lies outside the scope of this inquiry.

5. Material arrangement. A summary of conclusions and recommendations has already been placed at the beginning of the report. Pyramidlike arrangement of the material was considered the best way to report the results of the study. Basic tables and cross tabulations follow in Appendix A of this volume. The Supplement previously mentioned, gives descriptions of accidents, owner's reasons for insurance coverage, owner's occupational activities, and owner's comment on the insurance problem. Sampling techniques and other field work material appear in Appendix B. The material in the tables of Appendix A constitutes the first stage in the systematic presentation of the collected data and lays the foundation for further analysis and discussion in the text.

In the text herein the collected information is further refined and summarized. Discussion on the insurance problem is carried under five chapter topics: the owner's dilemma to carry or not to carry insurance on his vessel, cost of insuring for hull and protection and indemnity and loss experience of insurers, analysis of hull and protection and indemnity insurance accidents, the commercial fishing vessel as an insurable risk, and finally, the "insurance market." A glossary of terms is attached to this report in order to facilitate understanding of the insurance terminology used in the discussion.

Except for a few instances where necessary to illustrate certain points, percentaging is avoided when the percentage base consists of less than thirty frequencies or cases. This has been done to avoid describing any great amount of statistical significance to data based on small numbers. Instead, only the actual figures are cited in parentheses. The arithmetic mean is used frequently and, in view of the type of data assembled in the study, is considered a more appropriate measurement of central tendency than any other.

CHAPTER II

THE OWNER'S DILEMMA:

TO CARRY OR NOT TO CARRY INSURANCE ON HIS VESSEL

The vessel owner has two basic alternatives, either to insure his vessel for hull and protection and indemnity with risk carriers, or himself assume either or both of these risks. Although the choice does not seem to create serious difficulties for some vessel owners, for a large majority of them whether to insure or not creates, to a varying degree, a dilemma.

The decision of the vessel owner in this matter at any time is shaped by a number of factors. Let us examine the probable factors as reflected in the extent to which some owners have chosen to assume the full risk themselves while others have insured with the several risk carriers in this country and abroad.

A. EXTENT OF INSURANCE AND NONINSURANCE

1. Proportion and number of insured and noninsured vessels. Table 1 shows the average percentage of active vessels on which insurance was carried for one or more years during 1950-54 in each geographical area. About two-thirds of the sampled active vessels in New England were insured for hull and protection and indemnity insurance. Only about half of the active vessels in California carried both kinds of insurance. While in the Gulf Area the percentage of active vessels insured for hull is a little smaller than that in California, as little as 12 percent of Gulf Area vessels carried insurance for protection and indemnity. These percentages are fairly steady for each year of the period 1950-54 in all cases except in protection and indemnity insurance in the Gulf Area where it increased steadily from as low as 8.3 percent in 1950 to as high as 15.7 percent in 1954 (see basic tables in Appendix A).

According to statistical estimates which are derived from the basic schedules no more than 76 percent of all active vessels in New England, 50 percent in Gulf, and 56 percent in California are likely to have carried hull insurance in any one year during the period 1950-54. The maxima percentages for protection and indemnity insurance are estimated at 74 percent, 17 percent, and 53 percent in the three areas, respectively. On the basis of the active vessel population in each area at the end of 1954 and these maxima percentages, no more than 610 vessels in New England, 1,015 in Gulf, and 760 in California are likely to have been insured for hull in any one year throughout the period 1950-54. The estimated average yearly number of vessels on which protection and indemnity insurance was carried is 594, 342, and 722 in the three areas, respectively.

TABLE 1. - PERCENTAGE OF INSURED AND NONINSURED FISHING VESSELS DURING 1950-54[a]

Kind of insurance - insured and non-insured vessels	I. New England	II. Gulf Area	III. California
	Based on number of vessels		
	Percent	Percent	Percent
Hull insurance			
Insured vessels	70	43	50
Noninsured vessels	30	57	50
	100	100	100
Total number of vessels[a]	(235)	(198)	(260)
Protection and indemnity insurance			
Insured vessels	68	12	47
Noninsured vessels	32	88	53
	100	100	100
Total number of vessels[a]	(236)	(196)	(261)
	Based on gross tonnage		
	Percent	Percent	Percent
Hull insurance			
Insured vessels	89	57	89
Noninsured vessels	11	43	11
	100	100	100
Total gross tonnage[a]	(12,700)	(6,300)	(16,200)
Protection and indemnity insurance			
Insured vessels	88	20	87
Noninsured vessels	12	80	13
	100	100	100
Total gross tonnage[a]	(12,500)	(5,100)	(15,600)
	Based on market value of vessels		
	Percent	Percent	Percent
Hull insurance			
Insured vessels	91	64	87
Noninsured vessels	9	36	13
	100	100	100
Total market value of vessels[a]	($7,700,000)	($3,600,000)	($10,900,000)
Protection and indemnity insurance			
Insured vessels	90	24	86
Noninsured vessels	10	76	14
	100	100	100
Total market value of vessels[a]	($7,600,000)	($2,700,000)	($10,400,000)

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a/ As determined from the sample totals. In order to find the approximate number of insured and noninsured vessels in each geographical area, multiply indicated percentage by 801 for New England, 2,038 for Gulf Area, and 1,354 for California. These figures represent the active vessel population at each area at the end of 1954. Next, the approximate gross tonnage and market value of insured and noninsured vessels in the vessel population of each area may be estimated by multiplying the vessel population given above by the percentage of vessels and this proportion by the average gross tonnage and market value which appear in table 2 of this report.

Source: Table A-1 in Appendix A. Gross tonnage and market value computed from table 2.

Almost every vessel which carries protection and indemnity insurance is also likely to carry hull insurance except in the Gulf Area where 50 percent of the vessels insured for hull but only 17 percent for protection and indemnity risk.

2. Noninsurance based on gross tonnage and market value. The extent of noninsurance is much less if noninsurance is measured in terms of gross tonnage and reported market value of vessel rather than in number of vessels (table 1). Thus, in terms of gross tonnage, noninsurance for hull is only 11 percent in New England and California, and rises to 43 percent in the Gulf Area. Also noninsurance for protection and indemnity is 12 percent, 13 percent, and 80 percent in the areas, respectively. Except for California, noninsurance in terms of market value of vessel is even less extensive than in terms of gross tonnage.

In terms of gross tonnage, of the estimated 45,800 gross tons of active vessels in New England only about 5,000 gross tons were not insured for hull and 5,500 did not carry insurance for protection and indemnity. From an estimated total of 57,100 gross tons of active vessels in the Gulf Area the noninsured gross tonnage is estimated at about 24,500 for hull and 45,700 for protection and indemnity. Noninsurance for hull is estimated at about 11,000 and for protection and indemnity at 13,000 gross tons out of a total gross tonnage of about 99,400 in California.

Similarly, of the $27.9 million estimated market value of active vessels in New England only $2.5 and $2.7 million were not insured for hull and protection and indemnity, respectively. The noninsured market value is estimated at $13.9 million for hull and $29.4 million for protection and indemnity out of a $38.7 million total market value of all active vessels in the Gulf Area while in California, noninsurance figures are estimated at $8.4 million for hull and $9.1 for protection and indemnity out of a total current market value of $65.0 million.

Although in terms of gross tonnage and market value of vessel, noninsurance is less important than it seems to be in terms of number of vessels, the above findings indicate that noninsurance is extensively practiced in the Gulf Area and to a much lesser degree in New England and California. How can one explain the extent of noninsurance which the figures indicate? What are the reasons for noninsurance? Finally, how does this situation affect the insurance problem? In the remainder of this chapter an attempt will be made to answer these questions.

TABLE 2. - DIFFERENCE IN THE AVERAGE AGE, GROSS TONNAGE, LENGTH, HORSEPOWER, SIZE OF CREW AND MARKET VALUE OF INSURED AND NONINSURED VESSELS

Insured - noninsured vessels by area	Age -- 1956 (years)	Gross tonnage	Registered length (feet)	Horsepower of main engine	Reported size of crew	Market value (Thousand dollars)	Vessels in sample[a]
I. New England							
1. Insured vessels	20	68	68	198	8	$43	(193)
2. Noninsured vessels	26	21	45	94	4	10	(58)
II. Gulf Area							
1. Insured vessels	11	42	52	152	3	$27	(104)
2. Noninsured vessels	16	24	46	119	3	12	(121)
III. California							
1. Insured vessels	15	111	67	284	9	$73	(177)
2. Noninsured vessels	18	14	38	125	3	11	(111)

[a] Sample size applies to all characteristics except market value.

Source: Tables A-2 and A-26 in Appendix A.

B. REASONS FOR INSURANCE OR NONINSURANCE

1. Physical characteristics and safety standards of vessel.

Hull Insurance

Age. Occasionally, age alone may be the determining factor for insurance or noninsurance. Other things being equal, the older the vessel, the higher the rate for hull insurance. (Also see discussion on rate making in Chapter VI.) Noninsurance may be the result of outright refusal of an insurer to underwrite the vessel because of age. However, this occurs rather infrequently because a vessel may be refused by one and accepted by another insurer. More frequently, the insurance rate is so high that the vessel owner cannot afford to pay the premium, especially in the case of a small vessel. The remarks a vessel owner made during one of our interviews are a case in point: "Rates are prejudiced against good, old boats." The importance of age as a variable for noninsurance is clearly indicated in table 2 by the fact that for all three geographical areas the insured vessels are, on the average, newer than the noninsured.

Rig. A vessel equipped with gas engine is charged higher insurance rates because of the special fire hazard involved. The laconic expression of a vessel owner "gas screw, too high insurance," is most appropriate. Thus, the proportion of vessels with gas screw which are insured is much smaller than the sample percentage of insured vessels in all three areas as shown in table 5. In part, this low percentage may also be due to their relatively small size. (See discussion on size, below.)

Safety standards, communication or navigation apparatus, and equipment. According to the responses of the interviewed vessel owners, who furnished information, a larger percentage of insured than of noninsured vessels are built or classified under the rules of the American Bureau of Shipping or other classification society and are manned by a captain and/or engineer who has a license to operate a vessel of 200 gross tons or more. As will be noted in table 3, this percentage differential is consistent for all three above characteristics of vessels in all three areas. A similar picture is shown in table 4 with regard to communication or navigation apparatus and safety equipment although in many cases the percentage difference in both tables is not statistically significant.

A word of caution here is in order. Because insured vessels are shown to be relatively better than noninsured vessels in all the above vessel characteristics, it should not be inferred that the insured vessels are relatively better risks than the noninsured and therefore

TABLE 3. - SAFETY STANDARDS OF INSURED AND NONINSURED VESSELS

Characteristic	Percent of vessels reporting safety standards showing indicated characteristic					
	I. New England		II. Gulf Area		III. California	
	Insured	Noninsured	Insured	Noninsured	Insured	Noninsured
1. Vessel built or classified under the rules of the American Bureau of Shipping or other society	35.0	33.0	35.0	19.0	67.0	63.0
Vessels reporting	(149)	(43)	(71)	(94)	(126)	(56)
2. Captain has a license to operate a vessel of 200 gross tons or more	14.0	2.0	2.0	2.0	32.0	6.0
Vessels reporting	(189)	(58)	(82)	(98)	(142)	(94)
3. Engineer has a license to operate a vessel of 200 gross tons or more	8.0	2.0	0.0	0.0	28.0	4.0
Vessels reporting	(183)	(50)	(36)	(64)	(124)	(75)

Source: Tables A-14 to A-16 in Appendix A.

TABLE 4. - DIFFERENCES IN THE TYPE OF COMMUNICATION OR NAVIGATION APPARATUS AND SAFETY EQUIPMENT REPORTED ON BOARD INSURED AND NONINSURED VESSELS

Item	Percent of vessels with indicated apparatus or equipment					
	I. New England		II. Gulf Area		III. California	
	Insured	Noninsured	Insured	Noninsured	Insured	Noninsured
I. Communication or navigation apparatus						
1. Radio - telephone	96.0	67.0	85.0	65.0	98.0	80.0
2. Radio - transmitter	33.0	22.0	35.0	17.0	82.0	73.0
3. Radar	20.0	0.0	0.0	0.0	19.0	1.0
4. Radio direction finder	72.0	22.0	25.0	10.0	74.0	67.0
5. Fathometer	95.0	60.0	75.0	53.0	84.0	47.0
6. Loran	70.0	10.0	0.0	0.0	7.0	5.0
II. Safety equipment						
1. One or more life rings	75.0	35.0	26.0	13.0	94.0	90.0
2. One or more fire pumps	34.0	21.0	33.0	17.0	56.0	26.0
3. One or more bilge pumps to fight fire	87.0	60.0	86.0	73.0	79.0	73.0
4. Fixed fire ext. system	10.0	3.0	9.0	2.0	66.0	13.0
5. Three or more portable fire extinguishers	81.0	55.0	85.0	72.0	61.0	39.0
6. Medical chest available and well stocked	90.0	48.0	74.0	36.0	94.0	64.0
Number of sampled vessels	(193)	(58)	(104)	(121)	(177)	(111)

Source: Tables A-12 and A-13 in Appendix A.

TABLE 5. - COMPARISON OF VESSEL CHARACTERISTICS WITH PERCENTAGE OF INSURED VESSELS HIGHER OR LOWER THAN THE SAMPLE PERCENTAGE

Characteristic	Percent of vessels with indicated characteristic carrying insurance					
	I. New England		II. Gulf Area		III. California	
	Higher	Lower	Higher	Lower	Higher	Lower
I. Ownership						
1. Absentee owner	89.0	-	60.0	-	86.0	-
2. Fish dealer or processor	(13-13)[a]	-	-	38.0	(7-9)[a]	-
3. Captain owner	-	68.0	49.0	-	-	52.0
II. Captain's interest						
1. No interest	92.0	-	-	43.0	(18-21)[a]	-
2. Partner or stockholder	79.0	-	(17-25)[a]	-	82.0	-
3. Sole owner	-	66.0	-	43.0	-	36.0
III. Vessels owned						
1. Many-vessel owner	90.0	-	-	44.0	81.0	
2. One-vessel owner	-	70.0	49.0	-	-	54.0
IV. Owner's relation to crew						
1. Not related to crew	81.0	-	-	45.0	66.0	-
2. Related to crew	-	60.0	49.0	-	-	45.0
V. Mortgages on vessel?						
1. Vessel mortgaged	92.0	-	71.0	-	83.0	-
2. Vessel not mortgaged	-	70.0	-	36.0	-	56.0
VI. Vessel's rig						
1. Oil screw	84.0	-	50.0	-	71.0	-
2. Gas screw	-	(4-25)[a]	-	(4-27)[a]	-	15.0
VII. Vessel's category						
1. Active steel vessel	(13-13)[a]	-	(11-12)[a]	-	(10-12)[a]	-
2. Lost wood vessel	(24-26)[a]	-	(10-18)[a]	-	70.0	-
3. Active wood vessel	-	74.0	-	43.0	-	55.0
VIII. National origin of officer personnel	"Canadian" "Scandinavian" "Portuguese"	"Italian"	"French" "Italian" "Anglo-Saxon"	"American"	"Yugoslav" "Portuguese"	"Anglo-Saxon" "American"
Percent of insured vessels in sample[b]	77.0		46.0		62.0	

[a] Base too small for percentaging: left-hand side figure represents insured and right-hand side all vessels with indicated characteristic.

[b] Percentages correspond to cumulative totals of 193 vessels in New England, 104 in the Gulf Area and 177 in California which were insured for one or more years during 1950-54.

Source: Tables A-3 to A-6, A-8 to A-11, and A-25 in Appendix A.

that there is a favorable selection of risks by the insurers. Subsequent discussions will show that the opposite is more likely to be true. Nor does it follow that these characteristics are exclusive factors for insurance or noninsurance. On the other hand, it is not denied that other things being equal, a vessel better built, properly manned, and equipped will be insured at a lower rate than another vessel which lacks these characteristics. The relation of insured and noninsured vessels, with regard to safety standards apparatus and equipment, is likely to be spurious, being primarily the function of vessel size.

Material of hull. All active steel vessels in New England and almost all in the other two areas are insured. On the other hand, only 74 percent of the active wood vessels are insured while all insured vessels represent 77 percent of the sample in New England, 43 percent compared to 46 percent in the sample in the Gulf Area, and 55 percent compared to 62 percent in the sample in California (table 5). One important factor for such a difference in the proportion of insured vessels between active steel and active wood vessels seems to be vessel size.

The importance of vessel size. Of all the physical characteristics of vessels discussed, size is apparently the most critical from the viewpoint of hull insurance. In the first place, the fact that a vessel is small is, and of itself, a major factor in that hull insurance rates are inversely related to size. Other things being equal, the smaller the vessel the higher the rate. (See discussion on rates in Chapter VI). Secondly, although age, material of hull, rig, or safety equipment may be important in the decision to insure or not to insure, these characteristics are almost incidental to size.

Actually, the fact that a vessel is small may act as a serious deterrent to insurance. Let us assume that a 75 gross ton vessel is insured for as much as $50,000 at 5 percent insurance rate and another vessel of 20 gross tons for $10,000 at 10 percent. Although the annual premium paid by the owner of the first vessel is larger than the premium paid by the owner of the second and smaller vessel, with these premiums the first owner would be able to write off the value of his vessel (assuming market value of vessel equals the amount of insurance) in 20 years, while the second owner would need only 10 years to be able to do the same.

The financial burden to the small vessel owner becomes almost unbearable where high insurance rates coincide with limited fishing operations. This condition becomes the most convincing argument against insuring, especially where other reasons for insurance are not present. The following quotation from a vessel owner is appropriate to the subject: "Carried hull in 1950 for partnership reasons only. Dropped it because it was too high. Could pay for boat in eight years with money spent on hull insurance." Another owner remarked that "Cost (meaning premiums for hull insurance) equals 10 percent of value of boat." The frequent comment of the interviewed owners, "rates too high", indicates fairly well their plight. This is consistent with the fact that noninsured vessels are much smaller than insured vessels in all three areas (table 2). In terms of market value, which may be assumed to indicate the approximate average amount of insurance, the average insured vessel is more than four times larger than a noninsured one in New England, more than twice in the Gulf Area, and almost seven times as large in California.

Protection and Indemnity Insurance

Among the vessel's physical characteristics, small size seems to be the only important factor for noninsurance because vessel size more or less determines the size of the crew on board. Thus, with the exception of the Gulf Area where other conditions prevail, the average crew on insured vessels is twice as large as on noninsured vessels in New England and three times larger in California (table 2). Owner's comment such as "do not need protection and indemnity while working for myself" or the phrase "small crew, protection and indemnity not desired" illustrates this point. But mere smallness of crew is not the only or an adequate condition. Invariably, crew size is related to other nonphysical characteristics of the vessel.

2. Vessel's nonphysical characteristics.

Hull Insurance

Vessel ownership. When the vessel is captained by the owner, or he is a one-vessel owner, such a vessel is less likely to be insured for hull. This is evidenced by the fact that in New England only 68 percent of the captain-owned vessels are insured while all insured vessels represent 77 percent of the sample. These percentages are 52 and 62 in California, respectively (table 5). Here is how one interviewer employed in the survey reports it: "Because of present health, owner feels that insurance is needed when vessel is not captained by owner." The opposite is true when a vessel is owned by a dealer, or a processor, or in absentia. In other words, where the captain has no interest or only partial interest in the vessel, or when the owner operates many boats, each hull is likely to be insured. At first glance, the Gulf Area seems to be an exception, but actually the deviation is largely the result of statistical limitations. The truth of the matter is that noninsurance is more extensively practiced among fleet operators in the Gulf than one-vessel owners.

Mortgage on the vessel. Were it not for the fact that banks and other creditors require hull insurance on the mortgaged vessels, the number of vessels with no hull insurance might have been much greater in all three areas. Table 5 shows that in all areas the percentage of insured vessels with mortgage is higher than sample percentage. An owner commented that he "would not have carried insurance if the boat were not mortgaged," and another: "Not insured in 1950-51 because the cost was too high. It is insured now to protect the mortgage!" Paying up the mortgage is sometimes cited as the reason for discontinuing hull insurance: "Had insurance only while boat was mortgaged!"

Protection and Indemnity Insurance

Ownership. Captain ownership, or one-vessel ownership seems to be related also to noninsurance for protection and indemnity. As a rule, supervision and control of fishing operations is much greater in this case which, as it was shown, makes the owner feel that there is no need for protection and indemnity insurance when "vessel is captained by owner!" The owner's confidence that an injured crewman will not go to the courts for personal mishap sustained on the job thus rests sometimes on the policy of the captain-owner toward his crew, even when no other relation exists between owner and crew. One captain erroneously thinks "Crew works on share basis--no protection and indemnity deemed necessary by captain and crew!" In another case the captain-owner followed an equally practical policy which also demonstrates the importance of trust and personal intimacy with his crew: "I felt it would be cheaper to pay my help his salary while he is off than to carry protection and indemnity insurance."

Owner's relation to crew. Family ties, however, between owner (usually captain owners) and crew seems to be an overwhelming factor for noninsurance for protection and indemnity. It is almost taken for granted that a family boat does not need this kind of insurance. Occasionally, the owner's comments reveal the presence of an explicit agreement among the relatives: "Relations are running boat and it was agreed they would be self-insured!" Thus the proportion of insured vessels with an owner-related crew is lower than the sample (table 5). The Gulf Area is again the exception for the same reason previously mentioned, i.e., extensive noninsurance of vessels owned by dealers or processors.

Mortgage on the vessel. According to existing maritime legislation, claims of crewmen for wages arising from personal injury, etc., while in the "service of the vessel" are considered a "preferred maritime lien," i.e., they have priority over all other liens, including mortgage on the vessel. Thus, the law may actually compel an owner to carry more insurance than he ordinarily would and a new mortgage may be a reason for insuring a previously noninsured vessel.

TABLE 6. - COMPARISON OF FISHING PERIOD AND MAJOR TYPE OF FISHING GEAR WITH PERCENTAGE OF INSURED VESSELS HIGHER OR LOWER THAN THE SAMPLE PERCENTAGE

Fishing period — gear	Percent of vessels with indicated characteristic which were insured					
	I. New England		II. Gulf Area		III. California	
	Higher	Lower	Higher	Lower	Higher	Lower
I. Fishing period						
One to six months	-	(1-8)[a]	(11-21)[a]	-	-	48.0
Seven to ten months	-	69.0	-	37.0	-	58.0
Eleven to twelve months	84.0	-	-	39.0	-	(10-18)[a]
II. Type of fishing gear						
Trawls	85.0	-	47.0	-		
Dredges	77.0	-				
Purse seines					81.0	-
Hook and line					-	54.0
Other	-	47.0	-	(10-25)[a]	70.0	-
Per cent of insured vessels in sample[b]	77.0		46.0		62.0	

[a] Base too small for percentaging: left-hand side figure represents insured and right-hand side all vessels with indicated fishing period.

[b] Percentages correspond to cumulative totals of 193 vessels in New England, 104 in the Gulf Area and 177 in California which were insured for one or more years during 1950-54.

Source: Tables A-21 and A-22 in Appendix A.

3. Fishing operations.

The vessel owner pays premiums for hull and protection and indemnity insurance in order to protect his property against exposure to certain insurable risks. Notwithstanding other factors, the duration and intensity of exposure to risks depends largely on the kind of fishing operations. Exposure to risk is directly related to number and duration of fishing trips; hence, the length of the fishing period. Yet, except in the case of returned premiums provided for in the insurance contract, premiums are paid in advance irrespective of the duration and to some degree of intensity of exposure to risks. In this sense, the cost of insurance differs from other operational costs such as fuel, food, supplies, and repairs. The latter costs are related directly while premiums are related inversely to fishing operations, i.e., they are more or less fixed annually. Therefore, other things being equal, the greater the duration of the fishing period the less burdensome the cost of insurance is likely to be.

The relationship of the fishing period to the incidence of insurance or noninsurance can be seen in table 6. The proportion of insured vessels in New England increases with the increase in the fishing period. Vessels with a fishing period of ten months or less have a lower proportion of insured vessels (69 percent), while vessels with a fishing period of eleven to twelve months have a higher proportion of insured vessels (84 percent) than the sample percentage (77 percent). The picture in the Gulf Area is different partly because of extensive noninsurance practiced by fleet operators which offsets the effect of fishing operations and partly because of a relatively larger number of new and lost vessels in the area, which, in this tabulation, were excluded from the sample. This latter reason affects also the results in California, although the proportion of insured vessels (58 percent) operating from seven to ten months a year is larger than the proportion of insured vessels (48 percent) with a fishing period no greater than six months. In connection with the fishing period some of the vessel owner's remarks are: "Too expensive for not fishing year round," or vessel is "not working enough," or insurance is "too high for what you get out of it for occasional use."

Another and perhaps more convincing way of showing the effect of fishing operations on noninsurance is to study the relationship of fishing grounds and insurance. Vessels fishing in Canadian waters, in the southern coast of the Gulf Area, and in Central and South America, where exposure to risks is likely to be greater and more intense, have a higher proportion of insured vessels than the sample percentage (100 percent, 66 percent, and 100 percent, respectively)

TABLE 7. - COMPARISON OF MAJOR FISHING GROUNDS AND KIND OF FISH CAUGHT WITH PERCENTAGE OF INSURED VESSELS HIGHER OR LOWER THAN THE SAMPLE PERCENTAGE

Fishing grounds - catch	I. New England		II. Gulf Area		III. California	
	Higher	Lower	Higher	Lower	Higher	Lower
I. Fishing Grounds						
New England Coast	78.0	-				
Middle Atlantic Coast	-	67.0				
Canada	(11-11)a/	-				
Gulf Area (North)			-	43.0		
Gulf Area (South			66.0	-		
California - Mexico					-	56.0
Central - South America					(25-25)a/	-
II. Kind of fish caught						
Cod, haddock	85.0	-				
Scallops	(23-26)a/	-				
Flounders	-	75.0				
Whiting	-	66.0				
Shrimp			48.0	-		
Tuna					78.0	-
Salmon					-	16.0
Albacore					-	55.0
Crabs					-	(5-12)a/
Other	-	73.0	-	38.0	77.0	-
Per cent of insured vessels in sample b/	77.0		46.0		62.0	

a/ Base too small for percentaging: left-hand side figure represents insured and right-hand side all vessels engaged in catching indicated kind of fish.

b/ Percentages correspond to cumulative totals of 143 vessels in New England, 104 in the Gulf Area and 177 in California which were insured for one or more years during 1950-54.

Source: Tables A-23 and A-24 in Appendix A.

in the three geographical areas (table 7). Inversely, vessels fishing in waters closer to their home ports have a lower proportion of insured vessels than the sample percentage. The statistics on fishing gear (table 6) and kind of fish caught (table 7) are further information on the same subject.

One final remark is necessary on this topic. The relation of fishing operations to the presence of insurance or noninsurance is in many respects another aspect of the effect of vessel size, due chiefly to the fact that vessel size is associated with the type of fishing operations. Small boats are likely to be engaged in daily trips or trips of short duration to nearby fishing grounds; many are owned by operators who do fishing on a part-time basis for a limited fishing period. These observations apply to both kinds of insurance in all three geographical areas and demonstrate again the unfavorable position of a small vessel against a large vessel in regards to cost of carrying insurance.

4. Receipts and expectations.

The significance of gross receipts from fish landings to the whole insurance problem will be discussed further in Chapter V. Here, only the probable relation of gross receipts from fish landings to the incidence of insurance or noninsurance will be taken up.

During times of curtailed fishing operations and falling receipts, payment of premiums for either or both kinds of insurance for a number of reasons is likely to be felt more than other operational costs such as food, fuel, ice, and supplies. As has already been pointed out, premiums in contrast to other operational costs, are semi-fixed; i.e., they are incurred irrespective of the duration of fishing operations. In addition, whether premiums are too high or too low becomes a relative matter dependent upon rising or falling receipts. Furthermore, as will be shown later, over the 1950-54 period premiums rose at times of falling or stationary revenue from fish landings.

The vessel owner's plight is indicated by the short but frequent comment that insurance protection is "too expensive" or "too much money." The relation of premiums to receipts is well illustrated by the following remark: "Premiums considered too high, fish business is not doing too well." At times of rising costs and stationary or falling receipts the number of marginal and submarginal operators is likely to increase, and premiums may make the difference between operating at a profit or loss. "Insurance is too expensive," one owner remarks, "and would nearly eliminate profits." For other owners, premiums mean an addition of existing losses: "Boat is losing money so why add to loss," or "By the time other expenses are met, no money remains for insurance."

One may now ask, are premiums more important than other operational costs? Premiums may influence the owner's decision both ways: either to carry or not to carry insurance on his vessel. On the one hand, although premiums, in contrast to other operational costs, are fixed, they are also postponable. In addition, the benefits which the owner expects to receive for insuring his vessel are neither immediate nor definite. In a sense, he buys an intangible commodity; a protection against certain risks. The tangible benefits which the owner expects to receive from the payment of premiums are contingent upon the fulfillment of a number of conditions provided by the insurance contract. Moreover, apart from other considerations related to the adjustment of claims, etc., when these conditions are realized the benefits received are not supposed to exceed the damage sustained minus the deductible because the marine insurance contract is considered to be an indemnity contract. Thus the owner may decide against insuring the vessel for either or both kinds of insurance if he thinks that the expected benefits are likely to be less than the cost of paying insurance or that payment of premiums is merely a prepayment of expected losses. Vessel owners' comments along these lines were: "Too expensive up to present time; if premiums were paid, they would have been the value of vessel. Now the vessel is paid for with savings." or "Protection and indemnity insurance is too expensive, easier to pay doctor bills," or "too much for the chance you take." The rather frequent cancellation of insurance contracts may be partly explained by the fact that premiums, as an operational cost, are postponable for either or both kinds of insurance.

Hull Insurance

On the other hand, an owner may decide to carry hull insurance on his vessel if the payment of premiums is considered as a means of overcoming his impending financial difficulties partially or wholly. Frequently, his decision to insure may arise from sheer misunderstanding or misinterpretation of the insurer's contractual obligation to indemnify. Whether repairs of the vessel are covered by hull insurance or not is very frequently a purely definitional matter or a matter of circumstances subject to a wide range of interpretation. Perhaps the following remarks of an owner illustrate this point: "Premiums are higher than cost of making repairs." Later we shall see how the structure of the insurance market allows room for the fulfillment of the owner's speculative expectations, including selling his frozen assets to the underwriters. At present, it is interesting to notice that the proportion of lost wood vessels which carried insurance before they were lost is higher than the sample percentage in all areas, especially in New England (table 5).

Protection and Indemnity Insurance

Still other considerations tend to affect an owner's decision to carry or not to carry protection and indemnity insurance. Here, protection is a means of minimizing probable losses arising from his unlimited liability for personal mishaps to the crew rather than for overcoming or solving his financial difficulties as may be the case with hull insurance. "I insured my vessel for protection and indemnity insurance after 1952 because I became afraid of the rising tide of large claims" a New England owner remarks. An owner from the Gulf Area explains: "Business good during those years (1950-54) and very few suits; now have to protect myself!" The survey field supervisor for one area along the Gulf coast reports: "While I was there, rumor among the operators had it that the first suit of its kind, a $50,000 damage claim for back injury against one boat owner had been filed." Apprehension may partly explain the constant rise of the proportion of vessels which are insured for protection and indemnity in the Gulf Area. (Table A-1, Gulf Area in Appendix A).

5. Other reasons for insurance or noninsurance.

No attempt will be made here to cover all possible factors largely because the subject is a major study in itself. For our purpose, other reasons for insurance or noninsurance are conveniently grouped under the following headings: the owner's background, the owner's lack of knowledge and information, port of vessel registration, self-insurance, insurance practices, and the owner's image of the insurance business.

The owner's background. Vessels with officer personnel of Canadian, Scandinavian,origin in the New England Area, French, Italian, and Anglo-Saxon origin in the Gulf Area and Yugoslav and Portuguese in California showed a higher propensity to insure than the sample percentage (table 5). For vessels with officer personnel of Italian origin in New England, American in the Gulf, and Anglo-Saxon and American in California, the proportion is lower than the sample percentage. It is likely that the relation is spurious and perhaps due to a combination of factors already stated, such as age, vessel size, type of ownership, family relationship, type of fishing operations, etc. On the other hand, it should not be forgotten that a large number of vessel owners and crew may have a strong attachment to their national heritage. Their cultural backgrounds are likely to permeate their whole attitude toward the insurance problem, including their decision to carry or not to carry insurance.

TABLE 8. - COMPARISON OF HOME PORT OF INSURED VESSELS WITH PERCENTAGE HIGHER OR LOWER THAN THE SAMPLE PERCENTAGE

Home ports by area	Insured vessel's with percentage	
	Higher than in sample	Lower than in sample
I. New England		
Rockland, Maine	-	(4-16)[a]
Portland, Maine	-	(8-14)[a]
Gloucester, Massachusetts	94.0	-
Boston, Massachusetts	-	67.0
New Bedford, Massachusetts	92.0	-
Plymouth, Massachusetts	(14-17)[a]	-
New London, Connecticut	-	(15-26)[a]
Percent of insured vessels in sample[b]	77.0	77.0
II. Gulf Area		
Tampa, Florida	-	(6-18)[a]
Biloxi, Mississippi	-	6.0
New Orleans, Louisiana	-	23.0
Morgan City, Louisiana	76.0	-
Galveston, Texas	53.0	-
Corpus Christi, Texas	(14-26)[a]	-
Brownsville, Texas	(21-22)[a]	-
Percent of insured vessels in sample[b]	46.0	46.0
III. California		
San Diego, California	81.0	-
Los Angeles, California	70.0	-
San Francisco, California	-	36.0
Eureka, California	-	(4-18)[a]
Percent of insured vessels in sample[b]	62.0	62.0

[a] Base too small for percentaging; left-hand side figure represents insured vessels and right-hand side figure all sampled vessels from each home port.

[b] Percentages correspond to cumulative totals of 193 vessels in New England, 104 in the Gulf Area and 177 in California which were insured for one or more years during 1950-54.

Source: Table A-20 in Appendix A.

The owner's lack of knowledge and information. Inability to understand or misinterpretation of insurance protection, namely, the expected benefits as well as the obligations arising from a marine insurance contract, is rather the rule than the exception among owners. The owner's inability to even remember the names of the insurance agent and/or company with whom he negotiated his contract (s) is a frequent phenomenon. The following remarks of an interviewer about an owner who carried hull insurance on his vessel are typical of this case: "Wasn't sure just what he carried but he said he had some kind with Holcomb." Another vessel owner "never heard of protection and indemnity insurance," and a third "Had been told by other boat owners it wasn't worth protection and indemnity insurance." A fourth owner's response was: "I didn;t realize that there was such insurance (protection and indemnity). I believed that seamen will be taken care of in a marine hospital." Ignorance is not only a reason for not carrying insurance but also for cancelling an insurance contract. One owner carried protection and indemnity insurance on his vessel for "only two years" and he cancelled his contract because insurance was "too expensive and didn't know what to expect." An owner from the Gulf Area reports that he carries no protection and indemnity insurance on his vessel because "I don't think insurance people will pay claims without law suit--according to what I hear."

Port of vessel registration. In New England, the proportion of insured vessels is higher in Massachusetts ports and lower in Maine and Connecticut ports than the sample percentage (table 8). The Port of Boston is an exception. Similarly, insured vessels are concentrated in ports located in the southern coast of the Gulf Area, while the proportion of insured vessels in northern ports is lower than the sample percentage. The two California ports in the north have a much smaller proportion of insured vessels, and the two southern California ports a higher percentage of insured vessels than the sample percentage. This relationship between port of vessel registration and the occurrence of insurance or noninsurance may be spurious to a large extent and the result of a combination of reasons stated above. Nevertheless, the probable influence of traditional or customary ways of doing things in each locality, of imitating a fellow owner or competing with him can hardly be denied. An owner from the Gulf Area remarks that protection and indemnity insurance is "not customary in fleet to which this boat belongs."

Self-insurance. Quite a few owners in the Gulf Area take the view that premiums which they would have paid for carrying either or both kinds of insurance are more than enough to cover the losses which they have sustained or they expect to incur. With regard to hull insurance, one owner remarks: "I lost one boat in twelve years. I can lose one boat every third and still save money by not taking insurance." A second owner observes: "I never have enough damage to cost as much as the insurance premiums would." A third owner considers both kinds of insurance: "Money spent on insurance could cover any damage to boat or personnel unless it were a total loss!"

Partly as the result of this view, noninsurance is more extensively practiced in the Gulf Area among fleet operators than one-vessel owners. Of course, the higher the premium and the larger the fleet, the greater the inducement for noninsurance. Assuming a fleet of 20 vessels with average replacement value of $30,000 per vessel at a 5 percent rate, the premium paid would be enough to meet the total loss of one vessel or partial losses amounting to $30,000 per year. If such a fleet owner has no insurance on his vessels but keeps these premiums in a reserve in order to meet total or partial losses against insurable risks on his vessel, he is self-insured. A self-insured owner would be able to reduce appreciably his cost of insurance, and might also enjoy tax advantages and interest gains. A similar reserve may be established to meet losses arising from risks covered by protection and indemnity insurance.

But as far as could be determined in this study, self-insurance does not seem to be widely practiced by fleet owners. With the exception of one fleet owner who indicated that "this company sets aside a sum equal to premium each year and has a surplus," no other interviewed owner disclosed a similar practice. A special inquiry made in the Gulf with a score of large operators after the completion of field work disclosed that none of those who responded had a self-insurance plan. The few financially strong fleet owners might be able to carry a considerable part of their risks themselves. For the majority of the owners in the Gulf and in the other two areas, especially the one vessel captain-owners, noninsurance may sometimes spell economic disaster. Two of the twenty-six lost vessels in New England, eight of the eighteen in the Gulf Area and nine of the thirty in California had no insurance coverage. An owner from the Gulf Area was "bitter about high insurance rates," an interviewer reports, "because he lost his boat with no insurance coverage." He had carried hull insurance on his vessels during the whole five-year period, 1950-54. A New England owner who had similar experience remarks: "Innocent suffer with the guilty policy should be abolished." The interviewer explained the owner's plight as follows: "Owner is bitter toward insurance company. In 1954 insurance company raised premiums. The owner cancelled policy. Some months later vessel was lost. Total burden fell on the owner!"

The previous remarks of the owners seem to indicate that payment of insurance premiums is largely considered a mere prepayment of losses to be sustained. Furthermore, noninsurance is considered identical to self-insurance. But noninsurance does not mean self-insurance, unless the owner sets up a reserve to meet losses from risks which could have been covered had he carried insurance with a risk carrier. Neither is a depreciation reserve a self-insurance plan, unless it provides for meeting damages to vessels beyond the normal wear and tear of machinery, equipment, and replacement of old scrapped vessels. Nor is a fund to meet medical expenses of injured crewmen sufficient to cover the owner's unlimited liability from civil suit. Since no single fleet operator is large enough to maintain a true self-insurance plan to cover all his insurable risks, a limited self-insurance plan could be combined with excess hull and protection and indemnity insurance with an independent risk carrier.

Insurance practices. Whether owners would be able to find a market to buy excess insurance without having to buy primary insurance at the same time is a different matter. As far as we were able to ascertain, in the past, risk carriers have written excess insurance only when accompanied by primary insurance. The subject of insurance practices and their importance to the insurance problem will be discussed in detail in Chapter VI. Here, a few practices of underwriting vessels will be mentioned which were found to be related directly to the decision to insure or not to insure.

Besides high premiums and deductibles, other insurance terms in and of themselves seem to have contributed to noninsurance. According to one New England vessel owner, "Hull insurance rates were raised from 11 percent to 15 percent" and "I could not get protection and indemnity insurance unless hull insurance was purchased too." Understandably, the high hull insurance rate reflects the poor quality of the risk in question. The condition of no protection and indemnity insurance without hull insurance is an additional tag on the price for insurance protection amounting almost to an outright refusal. Tie-in contracts may be justifiable in some instances because of the quality of the risk involved. However, unless circumstances like the above justify it, this condition as a general policy, reportedly being followed by some insurers, seems to limit the opportunity of owners to insure their vessels for hull without at the same time insuring it for protection and indemnity.

In contrast to the other areas, premiums for protection and indemnity insurance in California are not determined on the basis of crew size. This method unduly favors vessel owners with large crews and places at a disadvantage small crew vessels. One owner from that area comments on this method as follows: "When I first inquired, I thought it unfair that it costs the same amount to insure one man as a crew of ten."

On the other side of the ledger lies the fact that advantageously low rates to fleet owners or to owner cooperatives seem to have improved the chances of occurrence or diminished the chances of cancellations of insurance contracts. Also, extensive overvaluation by insurers, apart from its undesirable consequences (which will be discussed later) seems to have contributed to more vessels being insured for hull, although in a few instances overvaluation may have had the opposite results. Except for these general observations, insurance practices differ so widely and are so changeable as to defy any attempt to discuss them systematically within the space allotted for this report.

The owner's image of insurance business. The mental image which the owner has of the people who supply him with insurance protection seems to be more unfavorable than favorable. (The owner's comments on the terms of the insurance contract and on the adjustment of claims will be analyzed in later chapters. Here, the owner's general opinion of insurance agents or brokers and insurance companies will be examined to the extent that it may be a cause of noninsurance.) As many as three out of every four New England vessel owners who commented on insurance practices were critical of insurance companies, and about two out of three are critical of insurance agents or brokers. In the Gulf Area these percentages are 62 percent and 34 percent, respectively. The California owners seem to be less critical since only 33 percent of the responding owners expressed an unfavorable opinion of insurance companies and 14 percent of insurance agents or brokers (table A-129 in Appendix A). The percentage of owners with an unfavorable opinion might have been higher, especially on insurance agents or brokers, had it not been for the fact that a few owners are directly or indirectly connected with the insurance business and if it is assumed that the majority of non-respondents declined to express their opinion largely because of their critical attitude toward the insurance business. Quite a few vessel owners were concerned lest the interview they had with our field worker was a new approach for selling insurance.

The general consensus of owners having unfavorable comments is that insurance people are grossly unfair, they use too much pressure in order to sell insurance, they do not keep their promises, and they are getting rich from underwriting vessels. An interviewer describes an owner's attitude about insurance people as follows: "Does not trust them. Pessimistic. Very distrustful of insurance companies and brokers. Does not care to carry insurance any more." A second New England owner who cancelled his insurance contract because the insurance rate on his vessel was raised remarks: "Too much pressure from insurers. Not enough understanding of fishermen's problem!" A third vessel operator from the same area with no insurance says: "Insurance brokers won't give us a break and insurance companies aren't any good. They give every owner a bad deal!" According to an interviewer, another New England owner was "very bitter toward his insurance agent because when a claim was filed for damage from a fire, the agent claimed that the property damaged was not covered. The owner was told to find out all the prices of the articles lost. This took two days of contacting stores and warehouses. He couldn't understand why he was asked to do so when the company had no intention of paying off!" A Gulf Area owner was "convinced that agents and underwriters are getting rich by insuring the boats for more than they are worth." Another owner from California was critical of insurance companies rather than of the agents; "Too greedy; insurance companies won't pay claims easily. They should be quick in straightening out problems."

These comments emanate mainly from the owner's limited experience on hull insurance. Of course, this is natural because he not only is the payer of premiums but also the direct recipient of benefits. On the other hand, quite a few owners understand and are sympathetic to the insurer's position: "Too high rates are due to abuse by certain individuals against both fishermen and insurance companies!" Similar comments are made by others. Whether or not and to what extent this unfavorable opinion of the owners is justified involves a different aspect of the insurance problem to be examined later. Suffice it to say here that the owner's rather unfavorable image of insurance business in general may have contributed to noninsurance for hull. Since the owner is not intended to be the direct recipient of most of the expected benefits from protection and indemnity insurance, he is generally more objective and sympathetic toward insurance companies regarding this kind of insurance. Rather, his criticism is directed against the people who are involved in the adjustment of protection and indemnity insurance claims, namely, doctors, and lawyers, and also the existing legislation on the subject.

C. SUMMARY AND CONCLUSIONS

The vessel owner's dilemma, whether or not to carry insurance on his vessel, has been discussed through an examination of the extent of noninsurance and the reasons for insurance or noninsurance.

1. Extent of noninsurance. Noninsurance was measured in number of vessels and in terms of gross tonnage and market value of vessel.

During the five-year period under study, 1950-54, it was found that approximately 30 percent of active vessels in New England were not insured for hull and about 32 percent were not insured for protection and indemnity insurance. Noninsurance in the Gulf Area was the highest of all three areas with about 57 percent of the active vessels without hull insurance coverage and 88 percent without protection and indemnity insurance. The extent of noninsurance in California lies between the experience of the other two areas with 50 percent of active vessels noninsured for hull and 53 percent noninsured for protection and indemnity insurance.

In terms of gross tonnage and current market value of vessel, however, noninsurance is less extensive in all three areas. By these terms noninsurance on hull is only 11 and 9 percent respectively in New England, 11 and 13 percent in California and 43 and 36 percent in the Gulf Area. Similarly low percentages apply to noninsurance for protection and indemnity risk in New England and California, although in the Gulf Area it amounts to 80 percent on a tonnage basis and 76 percent on a market value basis.

2. Reasons for insurance or noninsurance. A number of variables were found to be associated with the occurrence of insurance or noninsurance for hull and protection and indemnity. The likelihood that a vessel is insured or not insured because of the presence of one of these variables may be very small or insignificant. On the other hand, the greater the number of variables present for any one fishing vessel the greater the likelihood that the vessel will be insured as described in "a" below or not insured as described in "b".

a. Variables related to the occurrence of insurance.

Hull insurance: a relatively new vessel; oil screw of main engine; a vessel with steel hull, well built, equipped and manned; a vessel not captained by the owner or whose captain has no interest or only partial interest in the vessel's ownership, or whose owner operates many vessels; a mortgaged boat; a vessel engaged in a lengthy fishing period and in distant fishing grounds; expected insurance benefits considered greater when the paid premium, especially when payment of premium is considered as a means of overcoming impending financial difficulties; modern business practices accompanied by an understanding of insurance principles; low insurance rates to fleet owners and to owner cooperatives; overinsurance; and the owner's attitude favorable toward the insurance business.

Protection and indemnity insurance: a large crew, usually associated with a large vessel which may sometimes be well built, equipped and manned; a vessel not captained by the owner or whose captain has no interest or only partial interest in the vessel's ownership, or whose owner operates many vessels; lack of personal or family ties between the owner on the one hand the captain and crew on the other; a mortgaged vessel; a vessel engaged in a lengthy fishing period and in distant fishing grounds; an increasing number of large court awards to crew claims for personal injuries, etc., or rumors about such an event among operators with large assets; modern business practices accompanied by an understanding of the unlimited liability of the owner in case of civil suit; and the presence of organized labor, bad management-labor relations, and labor's attitude toward accidents in the vessel's home port (usually port of fishing operations).

b. Variables related to the practice of noninsurance.

Noninsurance for hull: an old vessel; gas screw of main engine; a vessel with wood hull; a small vessel which may or may not be poorly built, equipped, and manned; a vessel captained by the owner, or whose owner does not operate any other vessel; a vessel free of mortgage or other burdensome financial indebtedness; a daily boat and a vessel whose fishing period is short; payment of premium nearly or completely eliminates expected profits; premium considered as a mere prepayment of expected losses, or expected insurance benefits considered smaller than prepaid premium; the owner's cultural background antagonistic toward the introduction of modern business practices, accompanied by inability to understand or misinterpretation of insurance principles; customary and traditional ways of running the business related to the owner's background but also to the vessel's home port (usually port of fishing operations); a limited self-insurance plan; high insurance rates together with the condition of no protection and indemnity without hull insurance; and the owner's attitude unfavorable toward insurance business.

Noninsurance for protection and indemnity: small crew or no crew at all, usually associated with a small vessel which may or may not be poorly built, equipped, and manned; a vessel captained by the owner, or whose owner operates no other vessels; personal or family ties between the owner or captain on the one hand and crew on the other; short fishing periods and daily trips; payment of premium nearly or completely eliminating profits, or expected protection likely to be less than the cost of insurance; premium considered as a mere prepayment of expected losses; limited assets; attitudes in favor of noninsurance or owner's inability to understand the meaning of insurance protection; absence of organized labor and amicable management-labor relations, or lack of fear toward loss from civil suit related to local conditions in the vessel's home port (usually the port of fishing operations); and high insurance rates together with tie-in condition of no protection and indemnity insurance without hull insurance or determination of premium on basis other than on crew size (latter condition is practiced only in California).

The above variables describe the typical or most frequent characteristics of insured or noninsured vessels. As ideal types they lack the numerous qualifications which are discussed in the text of the chapter.

3. Concluding remarks on the importance of noninsurance.

Noninsurance as a means of minimizing out-of-pocket expenses of operating a commercial fishing vessel is an indication of unsound business practices. If the saved premium is larger than the losses sustained during a period of years, the realized gains together with other imputed costs (managerial salaries, depreciation and borrowed capital) not properly estimated may lead to a false sense of prosperity. This situation may prolong the existence of inefficient fishing plants (vessels) and overcapacity in the industry to the disadvantage of all fishing operators. Contrastingly, if the saved premium is much less than the sustained losses, disaster hits the noninsured owner with the maximum severity while the adjustment process of the industry's overcapacity to the demand for its products is carried out in the most disadvantageous way for the economy.

The sum and substance of the occurrence of noninsurance seems to revolve around two pivotal points quite prevalent among small vessel owners. One is the realization that the premium for insurance protection is a postponable semifixed cost of fishing operations. The other is the lack of understanding of the meaning of insurance protection and the principles which govern insurable risks. Insurance protection as a semifixed cost is regressive, inversely associated with gross receipts from fish landings. As a postponable expense, noninsurance is intimately related to small scale fishing operations, which may be marginal or submarginal and to the general economic conditions and basic structure of the fishing industry. The second pivotal point, namely lack of understanding, emanates from the owner's cultural, traditionalistic background and his lack of training in modern business practices. Ignorance largely explains his attitude toward insurance business and his notion that payment of premium is merely a costly prepayment of expected losses.

A self-insurance plan becomes more and more advantageous the larger the premium required for insurance protection. On the other hand our inquiry did not disclose extensive use of self-insurance. In fact, no vessel owner at present operates a fleet large enough to enable him to self-insure against all insurable risks. A limited and well administered self-insurance plan, however, coupled with excess insurance carried with private risk carriers deserves the attention of both the vessel owners and the insurance people.

Noninsurance reduces the number of risks to be insured and therefore limits the operation of the law of averages. Moreover, apart from the widely accepted belief that insurance by itself has the tendency to increase the hazard, there are a few indications that the majority of noninsured vessels, especially in the Gulf Area may be better risks than the currently insured vessels. To the extent that this may be true, a plan inducing noninsured owners to carry insurance on their vessels may finally lower the cost of insurance protection for all insured owners. Although theoretically correct, this observation is subject to various qualifications to be discussed later.

The remainder of this report is focused on insured commercial fishing vessels only.

CHAPTER III

THE COST OF INSURANCE PROTECTION AND LOSS EXPERIENCE OF INSURERS

The vessel owner who decides to carry insurance on his vessel becomes burdened by a semifixed cost on his fishing operations. In this chapter evidence will be presented to show whether or not insurance cost has risen during 1950-54 and in what ways it is burdensome. Following this, the loss experience of insurers is discussed.

A. DEFINITIONS AND MEASUREMENT OF INSURANCE COST

1. The meaning of insurance cost. From the standpoint of the vessel owner the payment of premiums for either hull or protection and indemnity insurance or both may be viewed in two different ways: (a) as part of the cost of fishing and (b) as an expense which purchases a given amount of protection against certain insurable risks.

2. Measuring insurance cost. Under the first view, the cost of insurance may be measured in terms of gross premium. The principal reason for using gross instead of net premium is that we are interested more in what the owner contracted to pay for insurance protection than in what he actually has paid. Otherwise, the common denominator of the twelve-month period for which the contractual provisions are usually negotiated would have been lost. Use of the net premium would have created more measurement problems than it would have solved. For example, assuming a twelve-month contract, the net premium ÷ amount of insurance ratio would have included a numerator (net premium) which would have represented a period of less than twelve months, depending on the premium returned, and the cost of insurance would have been understated.

However, in order to measure the cost of insurance under the second view, the amount a vessel owner pays for insurance must be compared with the amount of protection he receives, i.e., the coverage which the insurer promises to give in return. Coverage refers to the amount of insurance, the franchise clauses, the deductible average clauses, the latent defects, the exclusions, and the numerous other provisions and qualifications of the insurance contract which specify the types of hazards against which the insured vessel owner is protected and the conditions or circumstances under which the insurer is liable.

The numerous possible combinations of these provisions make the insurance contract a highly flexible, legal instrument which enables the insurer to tailor the insurance policy to fit the particulars of any risk. Although some uniformity prevails in practice, differences in the terms of insurance contracts make it difficult, if not impossible, to compare precisely the cost of insurance between risks over time. An attempt is made here to measure the extent of protection which the insurers gave to the vessel owners in this study during the 1950-54 period by taking into consideration the key monetary and nonmonetary contractual provisions. In spite of numerous qualifications the chosen contractual provisions can be considered a reliable and satisfactory approximation.

Information concerning both the premium paid by the insured vessel owner and the protection guaranteed by the insurer are necessary in order to arrive at a satisfactory appraisal of the situation. Insurance may become costlier to the vessel owner by the payment of a higher premium without changing the extent of the coverage. But the cost of insurance may also rise by a reduction in the coverage without a change in the premium. Of course, insurance becomes costlier if both conditions develop or less costly if the opposite takes place.

B. HULL INSURANCE

1. Insurance cost in terms of gross premium. Our samples show that gross premium has risen during the years 1950-54 considerably in New England, less in the Gulf Area, and slightly in California.

In New England there was almost a steady increase of gross premium per policy per year studied--from $2,225 in 1950-51 to $2,820 in 1954-55, or a rise of about 27 percent. The rise was smaller in the Gulf Area. Gross premium per policy year increased from $1,008 in 1950-51 to $1,218 in 1954-55, or a rise of about 21 percent. California appears to have had a different experience. Gross premium dropped in the last two years from a high of $7,219 in 1952-53. However, the average gross premium for the first two years, 1950-52, was $6,242, $190 on the average lower than the $6,432 average of the last three years (1952-55) of the five-year period.

There are a number of factors which understate the actual rise of insurance cost in terms of gross premium. Arithmetic averaging has the tendency of concealing a great deal from the real picture by evening out the extremes. Most of the increase in gross premium originated from the two-thirds of policies with a larger gross premium in New England and from the upper one-half in the other two geographical areas. (Table A-27 in Appendix A). For some vessel owners the rise of insurance costs in terms of gross premiums has been accompanied by a curtailment of the coverage making insurance protection costlier. In still other instances the reverse may have been true. Insurance contracts are negotiated and become effective on any day during a calendar year so that policies which become effective during the second half of each calendar year expired during the first half of the following year. Thus, averaging of the gross premiums on the basis of the effective calendar year may have had an effect similar to a moving average by raising the average gross premium in the first half of 1950 and lowering it in the second half of 1954. These considerations and field work experiences lead us to believe that the burden of the rising premium was distributed quite unevenly among insured vessel owners and that the experience of vessel owners in each area may have been worse than is shown by the sample.

2. The cost of insurance in terms of coverage. The cost of hull insurance increased during the five-year period under study, not only because of the rise in premium, but also because of the reduction of coverage the owner received from the insurer in all three geographical areas.

First, let us refer to the coverage index, i.e., the ratio of gross premium divided by the amount of insurance, shown as item 2 in table 9. This index is a more accurate measure and a better base of comparison between the three areas than the insurance rate because it gives equal weight to the absolute amounts of premium and insurance. While the owner was paying an increasingly higher premium, at the same time he was buying a decreasingly smaller amount of insurance. On the average, a New England owner paid $441 premium for $10,000 of insurance protection in 1950-51. For the same amount of insurance he had to pay $510 in 1954-55. In the Gulf this rise in the cost of insurance was less pronounced. The required premium for $10,000 of insurance rose from $517 to $530 over the five-year period. The California average index rose nearly as much as the index in New England with a rise in premium from $634 to $716 for $10,000 of hull insurance.

A second measure indicating the rising cost of insurance coverage is observed in the provisions of the franchise and the deductible average clauses. (See Glossary of Technical Terms). During the five-year period the percentage of policies with a franchise clause declined in New England and California while the percentage of policies with a deductible average clause rose. (Table A-29 in Appendix A). Since a franchise clause is a more liberal provision than a deductible clause, this development presumably indicates a tightening of the contractual terms, notwithstanding a slight liberalization of terms of the deductible average clause indicated by an increase in the percentage of policies with deductible providing more exceptions. No indication of a similar development exists in the Gulf Area since no policies with a franchise clause were found in the sample. But in the Gulf,

TABLE 9. - THE COST OF HULL INSURANCE DURING 1950-54 AS INDICATED BY MOST IMPORTANT AND FREQUENT CONTRACTUAL TERMS

Item a/	POLICY YEAR 1950-51	1951-52	1952-53	1953-54	1954-55	1950-54 Average
I. **New England**						
1. Gross premium per policy (A-27, 9)	$2,225	$2,342	$2,226	$2,650	$2,820	$2,430
2. Coverage index (A-27, 12)	4.41	4.49	4.37	4.79	5.10	4.56
3. Franchise (A-29, 6)	$ 565	$ 593	$ 598	$ 638	$ 703	$ 613
4. Deductibles (combination of A-29, 10. 11, & 12)	$ 294	$ 285	$ 261	$ 307	$ 390	$ 312
5. Percentage of policies with the following non-monetary provisions:						
a) Inchmaree clause, full coverage (A-28, 3)	72	50	46	38	26	45
b) Exclusions on loss of equipment (A-30, 1)	88	77	75	84	83	81
Number of policies in the sample b/	(86)	(93)	(101)	(99)	(89)	(468)
II. **Gulf Area**						
1. Gross premium per policy (A-27, 9)	$1,008	$1,017	$1,151	$1,100	$1,218	$1,111
2. Coverage index (A-27, 10)	5.17	5.33	5.64	5.26	5.30	5.28
3. Deductibles (combination of A-29, 10 and 11)	$ 346	$ 338	$ 361	$ 427	$ 507	$ 409
4. Percentage of policies with the following non-monetary provisions:						
a) Inchmaree clause, full coverage (A-28, 3)	(11)c/	(17)c/	(16)c/	80	81	82
b) Exclusions on loss of equipment (A-30, 1)	(20)c/	80	80	77	70	76
Number of policies in the sample b/	(25)	(44)	(45)	(53)	(60)	(227)
III. **California**						
1. Gross premium per policy (A-27, 9)	$6,364	$6,119	$7,219	$5,932	$6,096	$6,551
2. Coverage index (A-27, 10)	6.34	5.55	5.51	7.10	7.16	6.36
3. Franchise (A-29, 6)	$2,277	$2,500	$2,339	$2,174	$2,139	$2,293
4. Deductibles (combination of A-29, 10, 11, and 12)	$ 435	$ 454	$ 444	$ 422	$ 517	$ 456
5. Percentage of policies with the following non-monetary provisions:						
a) Inchmaree clause, full coverage (A-28, 3)	100	100	100	100	100	100
b) Exclusions on loss of equipment (A-30, 1)	97	95	97	97	96	96
Number of policies in the sample b/	(61)	(65)	(73)	(71)	(68)	(338)

a/ For further reference the basic table and item numbers appear in parentheses after the description of each item.

b/ Not a base for items 3-5.

c/ Base too small for percentaging, actual frequencies in parenthesis.

Source: Tables A-27 to 30 in Appendix A.

the terms of the contract were already high because almost all policies studied provided for a deductible. Further, the insurance coverage was additionally reduced by an increase in the amounts to be deducted. In New England there was a steady and considerable rise in the average amount deducted under franchise and deductible clauses. The deductible amount rose also in the other two areas, while there was a slight decline of the franchise amount in California.

In New England a decline in the percentage of policies with full coverage under the Inchmaree clause (see Glossary of Technical Terms) from 72 percent to 26 percent, although desirable in other respects, is another indication of the rising insurance cost in that area. A slight increase in the percentage is evidenced in the Gulf Area, indicating some increase in the coverage. In terms of full coverage under the Inchmaree clause, protection is quite liberal in California, since all policies studied carried the provision. The percentage of policies with exclusions on loss of equipment remained fairly constant throughout the period in all three areas, indicating no substantial change in the coverage with regard to this provision (table 9).

To translate all contractual provisions related to coverage in quantitative terms is impossible. But after considering all available information, the conclusion is reached that the reduction in coverage may have contributed as much to higher insurance costs as the rise in premium, if not more.

3. Comparison of insurance cost between geographical areas. It is important to notice that the average gross premium for the five-year period was $6,551 in California, more than twice the $2,430 New England average and almost six times as large as the $1,111 in the Gulf Area (table 9). These differences are partly explained by the differences in the average size of vessel and operations in each area. In terms of both gross tonnage and market value of insured vessels the Gulf Area vessels are on the average about 40 percent and the New England vessels about 60 percent the size of California vessels (tables A-2 and A-26 in Appendix A). If premium differential between the areas was due entirely to vessel size, then the average insurance rate should have been the lowest in California and the highest in the Gulf Area because within each area insurance rates are inversely related to vessel size. (See table 27). Actually the reverse is true. Insurance rates for the last yearly period under study (1954-55) averaged 5.30 percent in the Gulf Area, 6.40 percent in New England, and 7.58 percent in California (tables A-27 in Appendix A). Assuming that the amount of insurance equals the market value, the number of years required to write off the market value of an insured vessel, excluding interest earnings, is on the average, about 19 years in the Gulf Area, 16 years in New England, and

TABLE 10. - THE COST OF PROTECTION AND INDEMNITY INSURANCE DURING 1950-54 AS INDICATED BY MOST IMPORTANT AND FREQUENT CONTRACTUAL TERMS

Item [a]	POLICY YEAR 1950-51	1951-52	1952-53	1953-54	1954-55	1950-54 Average
I. New England						
1. Gross premium per policy (A-31,9)	$1,425	$1,352	$1,597	$1,941	$2,543	$1,780
2. Gross premium per crew member (A-31,5)	$ 172	$ 167	$ 200	$ 220	$ 291	$ 210
3. Coverage index (A-31,13)	1.61	1.69	1.47	1.70	1.44	1.57
4. Deductible for personal injury (A-32,3)	$ 254	$ 256	$ 220	$ 185	$ 218	$ 217
5. Deductible for property damage (A-32,4)	$ 225	$ 228	$ 210	$ 196	$ 206	$ 208
6. Percentage of policies with deductibles (A-32,1)	35	41	56	50	70	51
7. Percentage of policies with owner on board covered for maintenance and cure (A-32, 7)	45	53	64	62	64	58
Number of policies in the sample [b]	(79)	(86)	(88)	(100)	(92)	(445)
II. Gulf Area						
1. Gross premium per policy (A-31, III)	$ 436	$ 321	$ 860	$ 509	$ 485	$ 527
2. Gross premium per crew member (A-31, II)	$ 313	$ 129	$ 110	$ 134	$ 129	$ 128
3. Coverage index (A-31, IV)	1.21	1.13	3.41	1.23	1.09	1.46
4. Deductible for personal injury or property damage (A-32, 5 and 6)	$ 250	$ 264	$ 220	$ 356	$ 659	$ 401
5. Percentage of policies with deductible (A-32, 1)	(4)[c]	(7)[c]	(5)[c]	(8)[c]	(11)[c]	88
6. Percentage of policies with owner on board covered for maintenance and cure (A-32, 7)	(0)	(0)	(0)	(0)	(2)	5
Number of policies in the sample [b]	(4)	(8)	(6)	(10)	(11)	(39)
III. California						
1. Gross premium per policy (A-31, 7)	$ 378	$ 399	$ 469	$ 681	$ 717	$ 526
2. Coverage index (A-31, 10)	0.27	0.23	0.28	0.43	0.43	0.32
3. Deductible for personal injury (A-32, 5)	$ 628	$ 664	$ 640	$ 684	$ 677	$ 658
4. Deductible for property damage (A-32, 6)	$ 242	$ 246	$ 244	$ 262	$ 272	$ 253
5. Percentage of policies with deductibles (A-32, 1)	100	100	100	100	100	100
6. Percentage of policies with owner on board covered for maintenance and cure (A-32, 7)	5	4	4	5	7	5
Number of policies in the sample [b]	(57)	(70)	(69)	(61)	(54)	(311)

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[a] For further reference the basic table and item numbers appear in parentheses after the description of each item.

[b] Not a base for items 4-7 in New England, 4-6 in the Gulf Area and 3-6 in California.

[c] Base too small for percentaging, actual frequences in parenthesis.

Source: Tables A-31 and 32 in Appendix A.

only 13 years in California. On this basis insurance cost in California is the highest, although it did not rise appreciably during the period under study, and the lowest in the Gulf Area with New England midway between the two.

In terms of coverage, the New England owner paid less premium on the average per $10,000 of insurance than owners in the other areas. For each $10,000 insurance, a New Englander paid, on the average, only $456 during the years 1950 through 1954; an owner from the Gulf Area paid $528, and a Californian $636. The average amount on franchise clauses was only $613 in New England, but $2,293 in California. The average amount on deductible clauses was $456 in California, $409 in the Gulf Area, but only $312 in New England. Only the percentage of policies with full coverage under the Inchmaree clause is much lower in New England than in the other two areas, indicating less protection in this respect. The percentage of policies with exclusions on loss of equipment are close enough so that the differences in coverage between the three areas, in this respect, may not be considered very important. Differences in the content of each clause and other contractual provisions make further comparison of coverage between the areas almost impossible and unnecessary for our purpose.

The sum of this area comparison is that the rise in insurance cost was greater in New England, and less pronounced in the Gulf Area and California. In terms of premium per hundred dollars of insurance and on the average, however, the cost for hull insurance during the five-year period has been higher in California than in the other areas with the Gulf Area probably in second position, closely followed by New England.

C. PROTECTION AND INDEMNITY INSURANCE

1. The cost of insurance in terms of gross premium. Substantial rises in the gross premium for protection and indemnity insurance occurred in New England. The average premium per policy was $1,425 in 1950-51 and climbed to $2,543 in 1954-55, a rise of 78 percent over the five-year period (table 10). The increase is equally significant in terms of gross premium per crew member which rose from $172 in 1950-51 to $291 in 1954-55. The increase was less pronounced in the Gulf Area with gross premiums rising from $436 to $485, or about 11 percent. These figures for the Gulf Area, however, are not statistically reliable because of the small size of the sample for individual years. California experienced the largest relative increase in gross premium during the period. From a figure of $378 per policy in 1950-51, gross premium increased to $717 in

1954-55, a rise of about 90 percent. In evaluating these findings, one should keep in mind the previous remarks on the effects of averaging and other qualifications. The financial burden caused by the rise in insurance cost was distributed during 1950-54 quite unevenly among the insured vessel owners and the over-all experience in each area may have been worse than is shown by the sample.

2. The cost of insurance in terms of coverage. In contrast to hull insurance, there are no definite signs that the cost of protection and indemnity insurance has increased in New England in terms of coverage. The coverage index shows that a New England owner was buying more dollar protection for the money he was paying. In 1950-51 he paid, on the average, $161 for $10,000 of insurance liability, while only $144 was required for the same amount of insurance in 1954-55 (table 10). A further extension of coverage is indicated by the fact that the average amount, both for deductibles for personal injury and property damage, fell during the five-year period. Finally, the percentage of policies with coverage of the owner on board for maintenance and cure increased, indicating further liberalization of the contractual terms. Against this extension of the coverage stands the doubling of the percentage of policies with deductible clauses. (Also see table A-32, New England in Appendix A for more detailed information.) It would be correct to conclude that coverage for protection and indemnity insurance decreased only if we assume that the decrease in coverage caused by the increase of the policies with deductibles more than offsets the increase in coverage brought about by the liberalization of the other contractual terms. Again, averaging may understate the rise in the cost of insurance. In view of our experience, however, it is more reliable to conclude that the extent of coverage in New England largely remained unchanged and the rise in the cost of insurance came about almost entirely through the increase in premium. Perhaps the unchanged coverage may explain, in part, why the rise in gross premium for protection and indemnity insurance was substantially greater than the rise in gross premium for hull insurance in both absolute and relative terms, as discussed above.

Apart from the smallness of sample size, the same conclusion may be reached for the experience in the Gulf Area. Contrastingly, the findings in California indicate an increase in cost for protection and indemnity in terms of coverage. A California owner paid $27 for $10,000 of insurance liability in 1950-51, while the premium rose to $43 for the same amount of insurance in 1954-55.

Although all policies provided deductible clauses for personal injury and property damage, the average deductible amount for the former clause during the period increased from $628 to $677 and for the latter clause from $242 to $272. The percentage of policies providing coverage for maintenance and cure of the owner on board remained the same.

3. Comparison of insurance cost between areas. In terms of gross premium and considering vessel size, the cost of protection and indemnity insurance is the highest in New England. The average gross premium for the 1950-54 period was $1,780 per policy and $210 per crew member. The Gulf Area comes next with $527 average gross premium per policy and $128 per crewman. Protection and indemnity insurance is least expensive in California with only $526 average gross premium per policy. No direct comparison can be made in terms of premium per crewman because indications are that in California, premium is not determined on the basis of crew size. An approximation can be reached by dividing average gross premium by 8.9, the average reported size of crew on board insured vessels (table A-2, California in Appendix A). During the five-year period, premiums for protection and indemnity in California averaged about $59 per crewman.

In terms of the coverage index, the three areas occupy similar positions. On the average, for $10,000 of insurance protection a New England owner paid $157, an owner in the Gulf Area $146, and a Californian only $32. However, the unfavorable position of the New England owner is substantially improved because of other relatively favorable contractual terms. The average deductible amount for personal injury and property damage was only $217 and $208, respectively. In the Gulf Area the amount for both clauses was $401, almost twice as large as in New England, while the deductible amount for personal injury in California was $658 and for property damage, $253. Also, only 51 percent of the New England policies provided for deductibles and 58 percent for maintenance and cure of the owner on board. These percentages were as much as 88 percent for the former clause and only 5 percent for the latter in the Gulf Area and 100 percent and 5 percent, respectively, in California.

When emphasis is put on the gross premium and coverage index, New England occupies the first position with the highest cost for protection and indemnity, followed by the Gulf Area and California. When the other contractual terms are emphasized, particularly the high personal injury deductible, California seems to occupy the first position, followed by the Gulf Area and New England. In terms of percentage rise in the over-all cost of insurance, California runs first with New England in the second position.

D. FURTHER REMARKS ON INSURANCE COST

It has already been pointed out that averaging and sampling may have underemphasized the actual insurance cost in each area. In fact, the extent of the financial burden imposed on the vessel owner by a rising insurance cost cannot be fully appreciated without further analysis.

The owner's decision to carry insurance on his vessel may entail not only the payment of premium but other financial burdens. Reports from insurers indicate that the rising tide of claims during the five-year period had later compelled them to raise their safety standards for underwriting a commercial fishing vessel. Higher safety standards requiring more frequent or regular bottom inspection, installation of safety devices, better selection of crew, and better upkeep of the engine, machinery, and equipment may create expenses in addition to the payment of premiums. Although credits may be given to owners who improve the safety of their vessels, these credits are not always given to him; or, if he receives them, premium savings of several years may be required to recover the additional cost. Furthermore, prepayment of the premiums and expenses for improving the safety of the vessel often requires short-term borrowing with interest charges further increasing the cost of insurance. Last, but not least, the insurance contract is a legal document subject to interpretation. Adverse loss experience may be accompanied by the lengthening of the period required for the adjustment of claims, creating additional inconvenience to the owner if not always additional expense. These remarks illustrate how the cost of carrying insurance may have risen more than the figures indicate because of expenses incidental to the rise in the premium and to the decline of the insurance coverage.

But the greatest increase in the owner's financial burden of insurance cost seems to come from another direction. Whether the cost of insurance is high depends to some degree on whether other operational costs are also rising and, to an extraordinary degree, on whether gross receipts from fish landings are falling. In other words, the cost of insurance may not be so burdensome because this cost has risen, but because receipts from fish landings have fallen.

E. THE LOSS EXPERIENCE OF INSURERS

1. The insurer's break-even ratio. The study of loss experience of risk carriers is essentially a study of the insurance problem from a different, but equally important vantage point, for the price the insured vessel owner pays for insurance protection is the revenue which the insurer receives for selling this protection.

For our purpose, we may distinguish two major cost categories which the insurer has to meet in order to run his business profitably. The first cost category consists of expenses for the adjustment of claims and the payment of losses. The second includes acquisition costs and all other general expenses of handling the business which are not allocated to particular losses, including taxes and accumulation of reserves. When all costs equal the received net premium, the insurer breaks even. This division of costs may be crude and arbitrary in many respects, but it is useful for illustrating the plight of the majority of insurers.

The response of the insurers to our inquiry disclosed that, for hull and protection and indemnity insurance, risk carriers break even if the first category of costs are between 60 and 70 percent of earned premiums. For a few insurers the ratio may be as high as 75 percent. A high break-even ratio indicates a more efficient concern and a larger proportion of earned premiums available to meet expenses for the adjustment of claims and to pay losses.

Differences in the break-even ratio among insurers are partly explained by the fact that in practice there are understandable differences in definition of administrative costs and expenses on the adjustment of claims. More important is the fact that some insurers are more efficient than others by operating at lower acquisition and other costs of the second category. Long established American firms, cooperatives, and most alien concerns seem to operate more efficiently than inexperienced underwriters with limited insurance facilities and volume of business.

2. Loss experience of hull insurance. The annual ratios of expenses for the adjustment of claims and paid losses to earned premiums for hull insurance appear in table 11. The average ratio for the five-year period is 65.9 percent in New England, 69.0 percent in the Gulf Area, and 44.4 percent in California. The field work experiences in this study seem to indicate that over-all loss experience in each area may have been between 5 to 10 percent higher than the ratio indicated by each sample because of possible escapage[2/] in the recording of paid losses. Assuming this to be the case, the loss ratios for the period 1950-54 may have averaged from 71 to 76 percent in New England, 74 to 79 percent in the Gulf Area, and 49 to 54 percent in California. Thus, the loss experience ratios in New England and the Gulf Area, for the period, may have been as high as or higher than the break-even ratio of the most efficient insurers in each area, while the loss experience ratio in California presumably has been less than the least efficient insurer in that area.

2/ The term escapage refers to policy records which escaped review of field workers for various reasons such as "records lost or destroyed", "non-cooperating firm", etc.

TABLE 11. - LOSS AND LOSS EXPENSE--NET PREMIUM RATIOS FOR HULL AND PROTECTION AND INDEMNITY INSURANCE, 1950-54

Policy year	Hull insurance			Protection and indemnity insurance		
	I. New England	II. Gulf Area	III. California	I. New England	II. Gulf Area	III California
1950-51	18.2	14.3	84.0	113.3	-	337.8
1951-52	41.9	175.1	28.8	216.1	-	165.3
1952-53	46.5	40.9	22.8	83.8	-	177.8
1953-54	132.6	17.7	28.0	69.7	-	49.7
1954-55	69.8	86.0	70.2	19.2	-	107.9
Loss ratio for period 1950-54	65.9	69.0	44.4	83.9	-	148.8
Policies studied 1950-54	(468)	(227)	(338)	(445)	(39)	(311)

Source: Tables A-61 and A-62 in Appendix A.

Caution should be exercised in applying these general findings to isolated or individual cases. The loss-experience ratios for the five-year period reflect the general situation in each area. For a few, loss experience was so severe that they were forced to withdraw from insuring commercial fishing vessels. Many an insurer reported loss ratios as high as 100 percent or more for three or four consecutive years. The reported loss ratios of a few well established concerns indicate that they had just broken even during the period under study but loss ratios in 1954 and later years were higher than their break-even ratio. The reason the average loss ratio for the five-year period in New England and Gulf Area has not been higher than is shown in table 11 is due mainly to the fact that the loss ratios of well established firms with a relatively large volume of business increased not only at a slower pace but later than the loss ratios of both the relatively small and the fly-by-night insurers.

The loss experience of individual insurers in California is as diverse as in the other areas. The lower loss ratio for the five-year period in this area is partly due to the relatively higher insurance cost (larger premium - smaller coverage, table 9) than elsewhere, but principally due to the very satisfactory loss experience of a leading insurer.

3. Loss experience of protection and indemnity insurance. Loss experience for the period under study, shown on table 11, averaged 83.9 percent of earned premiums in New England and 148.8 percent in California. No losses occurred in the Gulf Area in the small sample of 39 policy years studied. (As previously noted protection and indemnity insurance was not widely carried in the Gulf.)

Assuming the escapage of 5 to 10 percent, the loss ratio for the five-year period may have averaged from 89 to 94 percent in New England and 154 to 159 percent in California. The loss experience is well above the break-even ratio of the most efficient insurer in New England and twice as large as this ratio in California. The unusually high loss ratio in the latter area is not due to relatively large losses but mostly to relatively low insurance cost (small premium, etc., table 10). Insurers in the Gulf Area report very satisfactory experience for the small volume of protection and indemnity insurance they underwrite.

4. Comments. The loss experience of insurers offers the first explanation of the rise of the cost for both hull and protection and indemnity insurance. The rise was preceded by unsatisfactory loss experience. It is no mere coincidence that New England and the Gulf Area, with worse loss experience for hull insurance than California, also experienced a relatively greater rise in cost than the latter area. The same is true for protection and indemnity insurance. California and New England, with worse loss experience than the Gulf Area, also experienced a relatively greater rise in the cost of this kind of insurance than the latter area. This is a natural development since the insurer, like the vessel owner, expects to realize a profit by increasing his receipts (earned premium) and keeping his costs (including losses) to a minimum. Consequently, the cost of insurance should have risen more than the experience recorded in this study shows in order to meet an extraordinary amount of losses. Why this did not take place will be explained later (Chapter V).

The explanation which the loss experience of insurers offers is general and superficial. It raises more questions than it answers. What lies behind the unprofitable experience of risk carriers? What accidents and to what extent does each category of accidents account for the unusually large losses? What circumstances, conditions, and human conduct related to the fishing operations of the vessel may have contributed to the record of accidents? How and to what extent have insurance practices and policies and existing legislation encouraged the development of the insurance problem? These questions lead to the very heart of the problem which besets the commercial fishing industry and are taken up in subsequent chapters.

F. SUMMARY AND CONCLUSIONS

The financial burden of the owner who carries insurance on his vessel was presented in terms of gross premium and insurance coverage. Following this, the loss experience of insurers was offered as the first explanation for the rise in the cost of insurance.

1. The cost of hull insurance. In terms of gross premium, protection against hull insurance accidents rose during the years 1950-54 from $2,225 to $2,820 per policy in New England; from $1,008 to $1,218 in the Gulf Area; and averaged from $6,242 during the first two years, 1950-51, to $6,432 in the last three years, 1952-54, in California. In terms of coverage, the rise of insurance cost was equally, if not more, important than the rise in gross premium.

Comparison of insurance cost between areas disclosed that the rise in cost was greater in New England and less pronounced in the Gulf Area and California. But in terms of premium per hundred dollars of insurance, the average insurance cost during the five-year period was higher in California than in the other areas, with the Gulf Area probably occupying the second position, followed closely by New England.

2. The cost of protection and indemnity insurance. During 1950-54, average gross premium per policy increased from $1,425 to $2,543 in New England, from $436 to $485 in the Gulf Area, and from $378 to $717 in California. The cost of insurance, in terms of coverage, remained almost the same in New England with some contractual provisions increasing and others decreasing the extent of insurance protection. The Gulf Area had similar experience on coverage, although the small size of the sample renders these findings less reliable. Coverage in California seems to have declined, indicating a rise in the cost of insurance.

Comparison of insurance cost between the areas disclosed that California experienced the greatest percentage increase, with New England occupying second place. In absolute terms, protection and indemnity insurance seems to be costlier with regard to gross premium and amount of insurance in New England than elsewhere, although some other contractual provisions restricting coverage in the Gulf Area and California may offset these cost differentials.

3. Loss experience of insurers. According to our best estimates, during the period 1950-54 the paid losses and loss expense for hull insurance averaged from 71 to 76 percent of earned premiums in New England, 74 to 79 percent in the Gulf Area and 49 to 54 percent in California. This means that, on the average, insurers in the first two areas paid more in losses and expenses than the amount of their earned premium available for that purpose. In contrast, insurers in California, on the average, were able to pay losses and expenses and realize some gains. This over-all experience, however, conceals the fact that in all three areas some insurers sustained heavy losses and ceased underwriting commercial fishing vessels; others broke even, and a few realized some profits.

Insurers underwriting vessels for protection and indemnity insurance may have sustained heavy losses in New England and relatively heavier losses in California since, according to our best estimates, paid losses and loss expense during 1950-54 averaged from 89 to 94 percent of earned premiums in New England and from 154 to 159 percent in California. Loss experience in the Gulf Area was very satisfactory, according to our sample findings and insurers' reports.

4. Concluding remarks. The previous discussion on cost of insurance and loss experience permits a number of conclusions:

The cost of insurance in terms of gross premium and coverage may not always measure fully the financial burden which falls upon the owner of a commercial fishing vessel. Interest charges and other costs incidental to the carrying of insurance may make the cost of insurance more burdensome. Furthermore, the cost of insurance is mostly felt when other operational costs are also rising and receipts from fish and shellfish landings are falling.

It was shown that, willingly or otherwise, the majority of insurers have sustained losses particularly for protection and indemnity coverage, to the extent that their average loss experience was higher than their break-even ratio during the period 1950-54.

CHAPTER IV

THE RECORD OF ACCIDENTS UNDER HULL AND PROTECTION AND INDEMNITY INSURANCE

An analysis of the unprofitable loss experience of insurers first requires a close examination of the accident record for the five-year period covered by this study. For purposes of this report, accident records are analyzed under the following approaches: classification of claims for both hull and protection and indemnity insurance by frequency of occurrence and amount of loss paid; and examination of a number of physical characteristics of vessels which may bear directly upon the recurrence and severity of accidents together with a discussion of human failures as an important cause of accidents and, in particular, negligence and lack of knowledge and training.

A. HULL INSURANCE ACCIDENTS

1. Frequency of accident occurrence. A multiple classification of partial losses by the damaged part of vessel is shown in table 12. In New England, 54 percent of accidents involved hull damage and 41 percent damage to machinery and equipment. Both these percentages were higher in the Gulf Area--83 percent hull and 45 percent machinery and equipment--while they were reversed in California--37 percent hull damages and 68 percent machinery and equipment. In all three areas a number of partial losses involved damage to both hull and machinery which make the totals in the section of table 12 pertaining to kind of damage, add to more than 100 percent. Although a number of the accident reports did not specify what kind of machinery and equipment was damaged, motor trouble seems to be the predominent source of claims in all three areas. Losses of fishing gear were more frequent in California than elsewhere, primarily because of damage to or loss of the auxiliary motor boat commonly used for fishing in the area. The Appendix to table A-97 in Appendix A includes a more detailed account of parts of the vessel to which damage occurred.

The above classification of accidents is consistent with the fact that navigation hazard was cited as the most frequent cause of accidents (table 12). The Gulf Area, with 83 percent hull damage accidents, had 70 percent of the accidents caused by navigation hazard (also including collisions). California, with 37 percent hull damages, had 42 percent of accidents caused by the same hazard. The record for New England was between these two situations, with 50 percent of accidents caused by navigation hazard, wherein 54 percent of the accidents in New England involved damage to hull, indicating that nearly all were caused by navigation hazard. Mechanical failure is the next most important hazard in all

TABLE 12. - FREQUENCY OF HULL INSURANCE ACCIDENTS CAUSING PARTIAL LOSSES ON THE BASIS OF SELECTIVE CLASSIFICATION CRITERIA, 1950-54

Geographical area	Multiple classification of accidents by damaged part of vessel (percent)						Number of accidents
	Hull damage	Machinery and/ or equipment	Motor	Electrical	Winches	Fishing gear	
I. New England	54	41	25	4	1	3	(375)
II. Gulf Area	83	45	40	9	5	2	(65)
III. California	37	68	38	8	3	16	(152)

Geographical area	Classification of accidents by principal hazard (percent)						Number of accidents
	Navigation hazard (hit object other than a vessel)	Mechanical failure	Weather	Collision with another vessel	Collision (no further)	Fire hazard	
I. New England	34	27	21	13	3	2	(368)
II. Gulf Area	58	12	12	10	2	6	(68)
III. California	26	43	10	16	0	6	(153)

Geographical area	Classification of accidents by principal hazard and kind of damage (percent)									Number of accidents
	Navigation hazard - collision			Mechanical failure - fire			Weather			
	Hull only	Machinery -equipment	Both	Hull only	Machinery -equipment	Both	Hull only	Machinery -equipment	Both	
I. New England	73	16	11	2	86	12	69	17	14	(169-95-52)
II. Gulf Area	63	4	33	0	(7)a/	(2)a/	(5)a/	(1)a/	(1)a/	(48-9-7)
III. California	53	33	15	8	85	7	(4)a/	(10)a/	(1)a/	(61-67-15)

Geographical area	Multiple classification of accidents on the basis of all reported causal factors (percent)						Number of accidents
	Struck submerged object	Error of crew	Weather	Wear-tear	Collision with vessel	Fire	
I. New England	29	27	22	21	16	4	(369)
II. Gulf Area	56	19	12	6	13	6	(68)
III. California	18	29	10	32	17	6	(153)

a/Base too small for percentaging; actual frequencies in parentheses.

Source: Tables A-97, A-99-100 in Appendix A.

three areas, but in varying degrees. It is as important as navigation hazard in California where as many as 43 percent of accidents were attributed to mechanical failure. New England comes second with 27 percent of accidents caused by mechanical failure, and the Gulf Area third with only 12 percent. Weather, as the principal cause of partial losses, is almost as important as mechanical failure in New England, equally important as mechanical failure in the Gulf Area, but less important in California. It will be noted that fire was the principal cause of a very small portion of accidents in all three areas. More detailed classification by the part of vessel damaged and principal hazard, which appears in the same table 12 further verifies the above findings.

Finally, a multiple classification of partial losses on the basis of all reported casual factors is shown in the bottom of the same table 12. "Struck submerged object," without any further explanation describing the circumstances of this type of accident, occurred most frequently in the Gulf Area, with as much as 56 percent of accidents attributed to such obscure circumstances. Similar conditions caused 29 percent of accidents in New England and only 18 percent in California. "Error of crew" includes claims which were directly attributed to human failure but also collision with another vessel or other similar accidents which, in the judgment of the researchers, might have been the result of human error. Thus, as much as 27 percent of accidents were attributed to this cause in New England, 29 percent in California, and 19 percent in the Gulf Area. Yet, in spite of this liberal classification, human error, as a major cause of accidents, may be understated. Human nature, being what it is, has the tendency to understate in reporting accidents due to human failure. Reports from marine surveyors and vessel owners themselves seem to confirm this contention. It is to be noted that "wear and tear", as a cause of accidents, occupied the first position in California and was quite an important factor in New England.

2. Severity of hull insurance accidents. Frequency of accident explains in part the unprofitable loss experience of insurers. On the other hand, frequency of accident may be misleading unless frequency is related to the amount of loss paid.

The relation of frequency of claims and amount of paid loss is shown in table 13. Petty claims of $500 or less constituted 47.0 percent of all claims in New England, 49.2 percent in the Gulf Area, and only 28.0 percent in California. But the same claims represented only 4.1 percent of all paid losses in New England, 4.2 percent in the Gulf Area, and as little as 1.3 percent in California. At the other end of the distribution,

TABLE 13. - FREQUENCY OF HULL INSURANCE ACCIDENTS BY AMOUNT OF PAID LOSS PER CLAIM, 1950-54[a]

Geographical area - paid loss	Claims		Amount of loss		Paid lo per cla
	Percent	Number	Percent	Thousand dollars	Dollar
I. New England					
Less than $101	13.9	(40)	.4	(2.5)	$ 6
101 to 500	33.1	(95)	3.7	(25.0)	26
501 to 1000	23.0	(66)	6.8	(46.2)	70
1001 to 5000	21.6	(62)	21.0	(142.9)	2,30
5001 or more[b]	8.4	(24)	68.1	(463.8)	19,32
Total paid losses	100.0	(287)	100.0	(680.4)	$ 2,37
		Median $527 per claim			
II. Gulf Area					
Less than $101	6.6	(4)	.2	(.3)	$ 6
101 to 500	42.6	(26)	4.0	(6.5)	25
501 to 1000	19.7	(12)	5.5	(9.0)	74
1001 to 5000	21.3	(13)	20.0	(32.8)	2,52
5001 or more[b]	9.8	(6)	70.3	(115.7)	19,28
Total paid losses	100.0	(61)	100.0	(164.3)	$ 2,69
		Median $523 per claim			
III. California					
Less than $101	4.9	(7)	.1	(.4)	$ 6
101 to 500	23.1	(33)	1.2	(10.9)	33
501 to 1000	23.1	(33)	2.7	(24.0)	72
1001 to 5000	36.3	(52)	14.3	(125.1)	2,40
5001 or more[b]	12.6	(18)	81.7	(715.4)	39,74
Total paid losses	100.0	(143)	100.0	(875.8)	$ 6,12
		Median $958 per claim			

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[a] Percentages and averages were computed before rounding of numbers.

[b] The largest claim in each area was as follows: New England, $50,000; Gulf Area, $50,00 and California, $225,000.

Source: Tabulated directly from policy records. No basic tables in Appendix A.

large claims of no less than $5,000, which necessarily includes total losses, made up only 8.4 percent of all claims but 68.1 percent of all paid losses in New England, 9.8 percent of claims and 70.3 percent of losses in the Gulf Area, and 12.6 percent of claims and 81.7 percent of losses in California. The fact that the median paid loss per claim in California was almost twice as large as the median in the other two areas does not substantially alter the inverse relationship between frequency of claims and amount of paid losses, although it is important in other respects. Other things being equal, petty claims increase the cost of insurance, since certain expenses for the adjustment of claims are incurred, irrespective of the amount of paid loss.

Additional classifications of the amount of paid loss per claim are shown in table 14. All paid losses were quite unevenly distributed among the three major classes of vessels (table 14). As might be expected, lost wood vessels accounted for the largest amounts per claim in all three areas, but the percentages of all losses attributed to total loss of vessel differed greatly among the three areas. Total losses constituted only 39 percent of all losses in New England, 50 percent in the Gulf Area, and as much as 71 percent in California. The differences between the areas is partly explained by differences in number and size of vessels lost in each area and partly in the large number of petty claims in the Gulf Area and particularly in New England. Of all partial losses, active wood vessels were responsible for 56 percent in New England, and 24 percent in each of the other two areas.. Active steel vessels contributed substantially only in the Gulf Area--26 percent of all losses.

The classification of paid partial losses by damaged part of vessel and principal hazard reveals some interesting points. Damage to hull only or to machinery and equipment only were less severe than accidents damaging hull and, at the same time, machinery in New England and the Gulf Area, both in terms of amount of loss per claim and as percentage of all partial losses (table 14). In California, accidents damaging machinery and equipment only, constituted as much as 57 percent of all partial losses although, in terms of amount of loss per claim, accidents damaging both hull and machinery were the most severe. In terms of proportion of partial losses, navigation hazard was the severest in the Gulf Area, followed by weather and mechanical failure. In New England, weather (1953-54 hurricanes) contributed the largest proportion of partial losses followed by mechanical failure and navigation hazard. Mechanical failure was most important in California with navigation hazard second and fire hazard third.

TABLE 14. - SEVERITY OF MAJOR CATEGORIES OF HULL INSURANCE ACCIDENTS AS INDICATED BY THE AMOUNT OF PAID LOSS PER CLAIM, 1950-54[a]

Geographical area	Paid losses by major classes of vessels involved in the accident							
	Active wood vessels		Active steel vessels		Lost wood vessels[b]		All studied vessels	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
I. New England	$1,516	56%	$ 2,663	5%	$15,022	39%	$2,428	100%
II. Gulf Area	1,319	24%	1,539	26%	28,333	50%	2,726	100%
III. California	1,713	24%	15,016	5%	29,291	71%	6,042	100%

Geographical area	Paid partial loss by kind of damage to vessel							
	Damage to hull only		Damage to machinery/ equipment only		Damage to both		All claims reporting damage	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
I. New England	$1,007	36%	$1,151	26%	$5,307	41%	$1,584	100%
II. Gulf Area	972	36%	1,313	13%	2,167	52%	1,423	100%
III. California	1,523	16%	2,237	57%	6,546	27%	2,483	100%

Geographical area	Paid partial loss by reported principal hazard											
	Navigation		Mechanical		Weather		Collision		Fire		All hazards	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
I. New England	$ 798	18%	$1,389	25%	$2,818	42%	$ 688	7%	$ 8,225	8%	$1,509	100%
II. Gulf Area	739	32%	3,257	23%	3,100	26%	1,053	10%	3,850	9%	1,424	100%
III. California	3,127	28%	2,979	46%	1,656	7%	662	4%	11,420	15%	2,833	100%

Geographical area	Paid total loss by reported principal hazard (thousand dollars)											
	Navigation		Mechanical		Weather		Collision		Fire		All hazards	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
I. New England	$ 26.2	44%	$ 12.0	5%	.0	0%	$ .0	0%	$30.6	51%	$26.6	100%
II. Gulf Area	.0	0%	.0	0%	$15.0	18%	.0	0%	35.0	82%	28.3	100%
III. California	225.0	45%	125.0	25%	.0	0%	.0	0%	36.5	30%	82.7	100%

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[a] Columns designated (1) represent average amount of loss per claim; columns (2) express total amount of loss paid for each category of accident as per cent of all paid losses.

[b] Includes partial losses of lost vessels.

Source: Tables A-34, A-104, and A-105 in Appendix A.

In terms of amount of loss per claim, fire hazard was the source of the severest accidents for partial losses in all three areas. In addition, fire hazard contributed the largest portion of total losses in New England and Gulf Area while navigation and mechanical failure were more important than fire in California.

B. CLAIMS UNDER PROTECTION AND INDEMNITY INSURANCE

Inasmuch as no claims were found in the Gulf Area sample, examination of accidents is limited to New England and California.

1. Frequency of accident occurrence. As much as 80.0 percent of accidents in New England and 83.0 percent in California were of the personal injury category (table 15). Sickness, death, and property damage cases covered by this kind of insurance made up the rest of the claims. Of the personal injuries, injuries to hands accounted for about one-third in both areas; body injuries 26 percent in New England and 19 percent in California; and foot injuries 17 percent and 23 percent, respectively. Accidents involving sickness were not very important, at least in frequency of occurrence, accounting for 18.0 percent of accidents in New England and only 9.0 percent in California. Death and property damage cases covered by this type of insurance accounted for 2 percent of the accidents in New England and 8 percent in California.

It will be noted that as much as 52 percent of the accidents involving sickness consisted of poisoning and organic diseases which may not be considered strictly occupational hazards (table 15). Much also can be said for prevention and possible reduction of accident occurrence of infections and colds. Although it is natural that crews rather than officer personnel should account for most claims--84.0 percent of accidents in New England and 75.0 percent in California were attributed to crews--there is indication that personal injuries of New England crews were proportionately more numerous than personal injuries of officer personnel. Of all crew accidents in New England, 82 percent consisted of personal injuries; of all accidents of officer personnel, personal injuries account for 74 percent (table 15).

Available data for New England indicate that sickness and death have occurred among fishermen who are likely to be older than those who had personal injuries, although the difference may not be statistically significant. Of the activities during which personal injuries occurred, "engaged in fishing and fish processing" account for about 30 percent of accidents in New England and 40 percent in California (table 15). Since this is a multiple classification of accidents, in a few cases other factors may have contributed to the occurrence of an accident while the

TABLE 15. - FREQUENCY OF PROTECTION AND INDEMNITY INSURANCE ACCIDENTS ON THE BASIS OF SELECTIVE CLASSIFICATION CRITERIA, 1950-54

Geographical area[a]	Accidents by type of personal mishap (percent)				Number of accidents
(1)	Injury	Sickness	Death	Other[b]	
I. New England	80	18	2	(c)	(800)
III. California	83	9	3	5	(64)

	Major parts of body injured and major classes of diseases (percent)											
	Personal injury						Sickness					
(2)	Hands	Body	Feet	Head	Multiple	Don't know	Poisoning	Organic	Infectious	Cold-expos	Multiple	
I. New England	35	26	17	9	5	8	23	29	26	15	7	(649-144)
III. California	32	19	23	8	11	7	(1)[d]	(1)[d]	(0)	(0)	(1)[d]	(53-3)

	Accidents by officer personnel or crew involved (percent)		
(3)	Officer Personnel	Crew	
I. New England	16	84	(721)
III. California	25	75	(53)

	Accidents by type of personal mishap and personnel involved (percent)						
	Officer personnel			Crew			
(4)	Injury	Sickness	Death	Injury	Sickness	Death	
I. New England	74	23	3	82	16	2	(112-605)
III. California	(13)[d]	0	0	85	13	2	(13-39)

	Average age of person by type of personal mishap (year)								
	Arithmetic mean				Median				
(5)	Injury	Sickness	Death	Total	Injury	Sickness	Death	Total	
I. New England	42.2	45.4	46.9	43.5	41.3	45.0	42.0	42.3	(313-67-10)
III. California	40.7	0.0	0.0	39.9	41.5	0.0	0.0	41.0	(21-0-0)

	Multiple classification of injuries on the basis of all reported casual factors (per cent)									
(6)	Fishing	Falls	Equipment	Storm-sea	Fish processing	Working on boat	Negligence	Other	Don't Know	
I. New England	21.4	14.2	12.8	9.9	8.8	8.3	8.3	2.0	15.4	(649)
III. California	37.7	17.0	13.2	5.7	1.9	13.2	3.8	11.3	1.9	(53)

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[a] No paid losses in area II, Gulf Area.

[b] Includes property damage, loss of time, and catch by illegal seizure and fines covered by Protection and indemnity insurance.

[c] Less than 1 per cent.

[d] Base too small for percentaging; actual frequencies in parentheses.

Source: Tables A-112 to A-114, and A-116 in Appendix A. No basic table for distribution number 2, but material related to the subject

TABLE 16. - FREQUENCY OF PROTECTION AND INDEMNITY INSURANCE ACCIDENTS BY AMOUNT OF PAID LOSS PER CLAIM, 1950-54[a]

Geographical area - paid loss	Claims		Amount of loss		Paid loss per claim
	Per cent	Number	Per cent	Thousand dollars	Dollars
I. New England					
Less than $51	28.9	(206)	.9	5.1	$ 25
51 to 100	18.9	(135)	1.8	10.1	75
101 to 250	21.9	(156)	4.6	25.6	164
251 to 500	10.4	(74)	4.6	25.8	349
501 to 1000	7.0	(50)	6.4	35.9	718
1001 to 5000	10.7	(76)	29.5	164.7	2,166
5001 or more[b]	2.2	(16)	52.2	291.4	18,210
Total paid losses	100.0	(713)	100.0	558.6	783
	Median $110 per claim				
III. California					
Less than $101	10.6	(5)	.1	.2	$ 48
101 to 500	29.8	(14)	1.9	3.6	259
501 to 1000	23.4	(11)	4.5	8.8	793
1001 to 5000	14.9	(7)	11.0	21.5	3,074
5001 or more[b]	21.3	(10)	82.5	161.0	16,098
Total paid losses	100.0	(47)	100.0	195.1	4,150
	Median $810 per claim				

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[a] Percentages and averages were computed before rounding of numbers. No paid losses in the Gulf Area.

[b] The largest claim in each area was as follows: New England, $100,000; California, $52,000.

Source: Tabulated directly from policy records. No basic tables in Appendix A.

TABLE 17. - SEVERITY OF MAJOR CATEGORIES OF PROTECTION AND INDEMNITY INSURANCE ACCIDENTS AS INDICATED BY THE AMOUNT OF PAID LOSS PER CLAIM, 1950-54[a]

Geographical area[b]	Paid losses by type of personal mishap									
	Injury		Sickness		Death		Other[c]		All accidents	
(1)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
I. New England	$ 709	76%	$ 231	6%	$8,033	18%	$260	(d)	$ 744	100%
III. California	4,120	91%	5,500	9%	0	0	0	0	4,216	100%

	Paid losses for major parts of body injured (personal injury)													
	Hands		Body		Feet		Head		Multiple				All claims	
(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
I. New England	$1,029	47%	$ 527	20%	$ 750	17%	$ 543	6%	$1,011	7%	$503	3%	$ 709	100%
III. California	3,631	32%	4,304	24%	6,914	35%	1,501	4%	3,684	5%	250	(d)	4,120	100%

	Paid losses for major classes of diseases (sickness)											
	Poisoning		Organic		Infectious		Cold-exposure		Multiple		All claims	
(3)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
I. New England	$111	9%	$ 469	52%	$121	12%	$140	7%	$ 784	20%	$ 231	100%
III. California	114	1%	11,586	70%	0	0	0	0	4,800	29%	5,500	100%

	Paid losses for officer personnel or crew					
	Officer personnel		Crew		All claims	
(4)	(1)	(2)	(1)	(2)	(1)	(2)
I. New England	$ 546	11%	$ 894	89%	$ 835	100%
III. California	1,000	6%	4,975	94%	4,008	100%

	Paid losses by age of person involved in personal mishap							
	Less than 41		41 to 60[e]		61 and older		All Claims	
(5)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
I. New England	$ 695	32%	$1,164	56%	$1,275	12%	$ 709	100%
III. California	1,618	45%	1,991	55%	-	-	1,804	100%

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[a] Columns designated (1) represent average amount of loss per claim; columns (2) express total amount of loss paid for each category of accident as percent of all paid losses.

[b] No paid losses in area II, Gulf Area.

[c] Includes property damage, loss of time and catch by illegal seizure and fines covered by protection and indemnity insurance.

[d] Less than 1 percent.

[e] For California, age class includes 41 years old or older.

Source: Tables A-117, A-118, and A-121 in Appendix A. No basic tables for distributions number 2 and 3.

person was fishing or processing fish. Even allowing for overlapping, it is most likely that as much as 60 percent of accidents in New England and 50 percent in California may have occurred during activities other than fishing and fish processing. Rough seas, resulting in falls or injuries, accounted for about 24 percent of accidents in New England and 23 percent in California; injuries caused while working on equipment, but not while fishing, represented 12.8 percent of accidents in New England and 13.2 percent in California; and injuries caused while working on the boat or loading and unloading equipment represented 8.3 percent in New England and 13.2 percent in California. Negligence and intoxication were sometimes cited as causes of accidents.

2. Severity of protection and indemnity insurance accidents. In table 16, claims for accidents are distributed by amount of loss paid. Petty claims of no more than $250 each accounted for 70 percent of losses and small claims of no more than $500 for 80 percent of losses in New England, but represented only 7.3 percent and 11.9 percent of all paid losses, respectively. In California, small claims of no more than $500 accounted for only about 40 percent of claims but made up only 2 percent of all paid losses. Contrastingly, only 2.2 percent of claims in New England included payments of more than $5,000 but they represented 52.2 percent of all paid losses. In California, these percentages were 21.3 and 82.5, respectively. The reader should remember the remarks made previously about petty hull insurance claims.

The importance of personal injury claims as against sickness claims is further illustrated in the data shown in table 17. Accidents involving personal injury were not only more frequent but also more costly. The average amount per claim for personal injury was $709 in New England--three times larger than the $231 average per claim for sickness--and represented 76 percent of all paid losses. In California, loss per claim for sickness was larger than for personal injury, but accidents of the latter kind accounted for 91 percent of all paid losses.

With the exception of multiple injuries, the amount per claim for hand injuries was $1,029 in New England--almost twice as large as claims for body and head injuries--and 28 percent larger than claims for foot injuries (table 17). It may be observed that the reverse relationship prevailed in California where the amount per claim for hand injuries was smaller than for body and much smaller for foot injuries. The amount per claim, however, was $4,120, on the average, in California, about six times as large as the $709 average per claim in New England. The severity of hand injuries in New England can be observed through the fact that as much as 47 percent of all losses for personal injuries were paid for injury to hands. In California, this type of personal injury occupied the second position, with 32 percent of losses, while foot injuries claimed 35 percent and body injuries 24 percent. The marked severity of hand injuries in New England will be linked, in the following chapter, with the importance of the human element.

Claims for organic diseases which may or may not be considered an occupational hazard accounted for 52 percent of losses paid for sickness in New England and 70 percent in California (table 17). It is highly significant that multiple diseases and poisoning may also be considered, to a large degree, a nonoccupational hazard. In fact, as much as two-thirds or more of losses for sickness are paid for diseases which may not be considered occupational hazards under ordinary conditions.

Accidents of officer personnel are less severe than their frequency of occurrence indicates since only 11 percent of losses were paid for in such accidents in New England, and 6 percent in California (table 17). Finally, the amount of loss per claim seems to increase with the age of the injured person (table 17).

C. WHAT LIES BEHIND ACCIDENT OCCURRENCE

1. The problem of causation. The previous classifications of hull and protection and indemnity insurance accidents may be considered an approach to a systematic analysis of claim records. Yet, classification of accidents touches only the surface, and the problem of attributing an accident to a specific cause or causes becomes formidable, indeed.

Most accidents are the cumulative effect of many elements, physical or human, which contribute to the occurrence of an accident, in varying degrees. For example, it was found that most hull accidents are the result of navigation hazard. But what or who was responsible for the navigation hazard? What lies behind the obscure phrase "struck submerged object"? Did the vessel actually hit a submerged object? Or should the accident be attributed, at least partially, to poor vessel construction, poor maintenance, stormy weather, or to a combination of all these conditions? And if, by chance, all or most of these conditions had been present, could not the accident have been avoided if the captain were a competent navigator, the engineer better trained, or the whole crew well disciplined and more accident conscious? There is practically no end to this chain of questions.

Or, take an example from accidents under protection and indemnity insurance. Hand injuries are most frequent and severe in New England and second most frequent in California. What or who is responsible for such accidents? Is defective equipment the cause of it, or lack of adequate safety devices, inadequate first aid supplies, weather conditions, or the frequently slippery deck of the fishing boat? Assuming that all or most of these conditions existed at the time of the accident, could not the hand injury have been avoided if the injured crewman were more skillful in handling fishing equipment on board, more accident conscious, and careful or sober while working? Who or what is to be blamed may be of little importance insofar as establishing the owner's liability is concerned. But discovering the real causes which lie behind accidents is always important for their prevention.

On the other hand, our inquiry is aimed at discovering general conditions or situations which are associated with the recurrence of types of accidents, rather than pin pointing the specific cause or causes of one specific accident. Association of conditions or situations with accident recurrence may not always imply a causal relationship. This limitation, however, is an unimportant obstacle in the attempt to discover trends or tendencies which may become the basis for recommending certain accident-prevention measures. For the purpose at hand, the sample data, the long experience of marine surveyors, reports from insurers, the experiences of vessel owners, and the reports of field work supervisors were utilized.

2. Physical characteristics of vessels and occurrence of accidents. This survey did not include physical inspection of vessels and the owner's response may not always be reliable on matters which may question the seaworthiness of the vessel and the adequacy of safety standards on board. If we consider "don't know" as a negative answer, only about 25 percent of insured vessels in New England and Gulf Area were built or classified under the rules of the American Bureau of Shipping or other classification society. In California, about 48 percent of insured vessels belonged to this category (table A-14 in Appendix A). The average age of insured vessels in the sample was 19.8 years in New England, 11.2 in the Gulf Area, and 14.5 in California (table A-14 in Appendix A). Surveyor's reports indicate that great differences exist in the quality of construction and in vessel stability. Better standards of vessel construction, which may guarantee greater safety in navigation, seem to be sacrificed presumably to facilitate fishing operations. One underwriter in California attributes part of his total losses to the fact that "larger boats with tanks for fuel, bait, and fish have little free board and poor stability with the result that when they take on water they quickly go under".

The majority of vessels seem to be poorly equipped with safety devices and navigation instruments. Although portable fire extinguishers were reported as being common equipment to almost all insured vessels, according to the owner's response, only about 10 percent of insured vessels were equipped with a fixed fire extinguishing system in New England, 9 percent in the Gulf Area, and 66 percent in California (tables A-13 in Appendix A). Most insured vessels reportedly were equipped with radio-telephone or radio-transmitter, but only 20 percent were equipped with radar in New England, 10 percent in California, and none in the Gulf Area (tables A-12 in Appendix A).

According to the response of the interviewed owners, 90 percent of insured vessels in New England, 74 percent in the Gulf Area, and 94 percent in California were equipped with a well stocked medical chest. This response, however, was not verified with a physical inspection of the vessel. But even if it were to be accepted at its face value, the question of what a well stocked medical chest consists of still remains unanswered. Furthermore, there is a great difference between the owner's intent and whether he actually does replenish first aid supplies on board his vessel frequently and regularly. New England representatives of the Atlantic Fishermen's Union point out that failure to check and replenish the stock in the medical chest is rather frequent on vessels not captained by the owner.

The above limited information on the safety characteristics of vessels is indicative only of the safety standards which prevail among commercial fishing vessels. There is no way of telling to what extent lack of adequate safety standards have contributed to the unprofitable loss experience of risk carriers of hull and protection and indemnity insurance. On the other hand, although a program designed to improve physical safety standards may be highly desirable, it may prove quite ineffective unless the human element is also seriously considered.

3. The outstanding significance of the human element. The best constructed and equipped vessel is as good a risk as the people who man and operate it. Although somewhat dogmatic, this statement hardly overemphasizes the paramount importance of the human element as a decisive factor in the prevention and reduction of the frequency and severity of accidents. In a decided majority of hull and protection and indemnity insurance accidents, the human element underscores the physical causes which may be present. Human nature manifests itself in a variety of forms: from the mildest type of ignorance and lack of knowledge, to inexcusable negligence; from poor maintenance, to intentional destruction of property and complete disregard for the special occupational hazards of fishing. This portion of the report covers some aspects of human conduct which are largely the result of ignorance and negligence. Other aspects of human behavior related to poor maintenance and moral hazard will be discussed in the next chapter.

In a very broad sense, ignorance may take a variety of forms. The captain's lack of adequate training in the use of navigation instruments and in seamanship is almost universally recognized by long-established vessel owners and insurance surveyors alike. Some evidence for this is offered by the fact that only 14 percent of insured vessels in the New England sample, 2 percent in the Gulf Area, and 26 percent in California had a captain with a license or certificate to operate a steam or motor vessel of 200 gross tons or more. Lack of license does not necessarily mean an incompetent captain, of course, (table A-15 in Appendix A) for a few nonlicensed captains may be as good as or better seamen than licensed captains. On the other hand, lack of license, in most cases, indicates far more than mere lack of formal evidence of competence.

A few incidents, from the many reported, will amply illustrate this point. A common practice in the Gulf Area is to operate the vessels in convoys with only the first boat captained by a man who knows how to navigate. This follow-the-leader navigation method sometimes has disastrous consequences in stormy weather and on days of poor visibility if the convoy becomes separated. A New England surveyor of excellent reputation once found that the compass on a vessel was not working and called the skipper's attention to it. The captain replied: "It's all right, I know my way out and back." Another marine surveyor from the Gulf Area pointed out the disastrout consequences of a certain captain's lack of navigational skill: "The captain of a vessel was lost. When he tried to hail another vessel to find out where he was, he ran into the second vessel and sank both." Accidents which are due to poor navigational skill are also frequent in California (see description of accidents in supplement referred to in Preface). United States Coast Guard officers report that captains of fishing vessels very frequently fail to comply with the international requirements of the sea. Of all the important cases of assistance rendered by the United States Coast Guard to all types of vessels, one-fourth to one-third are estimated to have involved assistance to commercial fishing vessels. On the other hand, it is interesting to note that vessels of less than 200 gross tons are not subject to inspection by the United States Coast Guard.

There is no way of drawing a line of demarcation at the point where the captain's lack of knowledge and his negligence begins. The best constructed and equipped vessel is no guarantee to accident prevention when the captain lacks the required sense of duty and responsibility to protect the vessel. Too much reliance on the automatic pilot is a source of frequent and severe accidents reported by insurers, especially in the Gulf Area. A vessel in the Gulf Area had been beached because of a threatening hurricane, whereby the captain packed his suitcase and left immediately. According to the marine surveyor who reported this incident, "Good seamanship could have saved this vessel."

A leading insurer from the same area describes his futile attempt to reduce accidents from fire hazard as follows: "Several years ago most boats were carrying small hand fire extinguishers inside the engine room, which was just where most fires started. Two years ago, our company began to require placement of the extinguisher outside the engine room door. But that was not satisfactory either. A man would reach around the door, start the extinguisher discharging, then toss it into the middle of the fire and abandon ship." Of course, the captain, as the vessel's master, must share the greatest part of the responsibility, but not infrequently accidents occur because of the engineer"s and crew's lack of training and discipline or negligence. For example, considering "don't know" as a negative answer, only 8 percent of the insured vessels in New England were manned by a licensed engineer, none in the Gulf Area, and 20 percent in California (table A-16 in Appendix A).

The captain's lack of appreciation for accident-prevention devices may reach the point of removing previously installed safety devices. A New England incident is quite illustrative. A vessel operator purchased from the United States Government several steel vessels, previously used in Germany. The captains requested a number of changes on the vessels, among which was removal of railings around the bollards and the automatic cable guide on the winch which the Germans had installed for the safety of the crews. Reportedly, the excuse for the removal of these safety devices was that the railings were in the way and hindered operations and that the automatic cable guide on the winch would not work satisfactorily for the type of fishing in which the vessels were to be engaged.

Incidents such as the above, which demonstrate the important contribution of the human element to conditions which might give rise to the frequent occurrence and severity of either hull or protection and indemnity insurance claims, are numerous. The following is a list, by no means exhaustive, of similar practices which further illustrate the extent of ignorance and negligence on the part of the captain, the engineer, and the crew: poor vessel keeping; carelessness in the maintenance of equipment; failure on the part of the captain, mate, and engineer to spend sufficient time on safety training sessions with the crew; failure to train new men in the proper handling of the fishing gear and fishing equipment; unclean and slippery conditions of decks and the engine room; overloaded or poorly insulated circuits; use of gasoline in wood-burning stoves to start fires more quickly in cold weather; failure to check fuel tanks periodically against leaks; smoking in the engine room where a gas engine is in operation; discharge of crankcase oil into the bilges; disinterest and lack of knowledge concerning the motor and how it operates; how it is tuned; when and how defective parts should be replaced before the engine fails; periodic visits to the engine room rather than the maintenance of a continuous watch; recruiting of personnel--captains, engineers, and deckhands--with known bad accident records as well as drunks and other persons who do not qualify to become crew members; and finally, considering size of vessel and equipment, venturing out too far looking for new fishing banks or bait, staying away from home for unduly lengthy periods, or staying until the last moment despite warnings about forthcoming stormy weather. Although differences of opinion may exist as to the degree to which the above practices contribute to the frequency and severity of hull and protection and indemnity insurance accidents, the prominent part which the human element plays in the insurance problem is well illustrated.

D. SUMMARY AND CONCLUSIONS

Examination of the accident record of hull and protection and indemnity insurance may be summarized as follows:

1. Hull insurance accidents. During the years 1950-54, damages to the hull of vessel were the most frequently occurring accidents in New England and especially in the Gulf, while the most frequent accidents in California consisted of damages to machinery and equipment. Of the damages to machinery and equipment, motor trouble seems to be more frequent than damages to electrical equipment, winches, and fishing gear in all three areas. Navigation hazard, mechanical failure, and weather were the three most frequent hazards, in that order, in New England and the Gulf Area, while in California, mechanical failure was more frequent than navigation hazard and weather. A multiple classification of accidents disclosed that "struck submerged object" was the most frequently occurring cause in New England and particularly in the Gulf Area, followed by "error of crew" and weather. "Wear and tear" was the most frequently cited cause in California, followed by "error of crew" and "struck submerged object." "Wear and tear" was almost as important in New England as weather, while collision with another vessel was frequent in all three areas.

In terms of amount of loss, the adverse loss experience of insurers in New England and Gulf Area was due to both frequency of petty claims of $500 or less and large claims of more than $5,000. In California, losses were due to large claims to a greater extent than to petty losses. Total losses contributed

39 percent of all losses in New England, 50 percent in the Gulf, and 71 percent in California, with the remaining portion shared by partial losses of active wood and steel vessels. Although fire hazard was the least frequently occurring cause, it was the source of the largest average amount of partial loss per claim in all three areas and contributed to the largest portion of total losses in New England and Gulf Area. Weather in New England, navigation hazard in the Gulf, and mechanical failure in California contributed the largest proportion of partial losses. Navigation hazard accounted for the largest part of total losses in California and was second to fire hazard in total losses in New England.

2. Protection and indemnity insurance claims. For every one hundred accidents, 80 in New England, and 83 in California consisted of personal injuries during 1950-54. Hand injuries were the most frequently occurring personal injuries in both areas, while in New England, organic diseases and poisoning, mainly nonoccupational in nature, were more frequent than diseases which generally may be considered occupational, such as infections and exposure.

Petty claims of no more than $250 each were very frequent in New England--70 percent of the total number of all claims--but less frequent in California. Contrary to the prevailing notion, only 52 percent of the total amount of all losses in New England were due to large claims of more than $5,000 each, while 83 percent of the total amount of all losses in California were the result of claims amounting to more than $5,000. The amount of losses paid for personal injuries constituted three-fourths of all losses in New England and nine-tenths in California. Hand injuries constituted the most severe personal injuries in New England, with the largest amount of loss per claim and the largest proportion of losses, while foot injuries constituted the most severe personal injuries in California. In terms of amount of losses, nonoccupational diseases--organic diseases and poisoning--were more severe than occupational ones--infections and cold or exposure.

3. Concluding remarks. Examination and discussion of the accident record disclosed a number of points which partly explain the largely unprofitable experience of insurers.

During 1950-54, the adverse loss experience of hull insurance was partly due to the frequency of accidents and partly to large claims. It is interesting to notice that New England, with partial losses amounting to 61 percent of all losses, and Gulf Area, with 48 percent partial losses, had worse loss experience than California, with only 29 percent partial losses. Of course, the relatively favorable loss experience for hull insurance in California is partly the result of relatively larger premiums collected in that area than elsewhere. Yet, the prominence of partial losses in New England primarily, and, to a lesser extent, in the Gulf Area is significant.

Although individual claims of more than $5,000 for protection and indemnity insurance represented 83 percent of all paid losses in California, the same size claims made up only 52 percent of all paid losses in New England. Importance of large awards for protection and indemnity claims appears less impressive in New England than was widely quoted throughout the region. Consequently, there seems to be a tendency to overestimate the importance of a few large claims and underestimate the importance of frequent petty claims.

It was also found that small and petty hull and protection and indemnity insurance claims were relatively more frequent in New England than elsewhere. In view of the fact that this development is partly the result of small deductibles in the area and that certain expenses for the adjustment of claims are incurred irrespective of the size of claim, insurers may be able to improve their loss experience in New England and in the Gulf Area for hull insurance by increasing the deductible amounts.

Although the physical inadequacies of commercial fishing vessels may have contributed to the frequency and severity of accidents, it is the human factor which is of paramount importance. With occasional exceptions to the rule, the captain, the engineer, and the crew lack the necessary training which will help them to perform their respective duties with maximum safety, both to the vessel and themselves.

CHAPTER V

THE COMMERCIAL FISHING VESSEL AS AN INSURABLE RISK

In the previous chapter, through an examination and discussion of the accident records, an attempt was made to explain the largely unprofitable loss experience of insurers which contributed to the high cost of hull and protection and indemnity insurance. In order to throw additional light on the adverse loss experience of insurers, the commercial fishing vessel is viewed in this chapter as an insurable risk.

A crucial question may be raised here: In what ways may the structure and business outlook of the commercial fishing industry and existing marine legislation have adversely affected the insurability of the risk and therefore contributed to the insurance problem? In an effort to answer this question, the following topics will be discussed. First, certain structural characteristics of the fishing industry related to the problem at hand; second, the selection of risks among commercial fishing vessels; third, the importance of business conditions in the industry; finally, maritime legislation as a source of the protection and indemnity insurance problem.

A. THE COMMERCIAL FISHING INDUSTRY

1. Lack of identity of interests among vessel owners. The widely diverse national origin of officer personnel of vessels (table A-11 in Appendix A) largely reflects the highly diversified cultural background of the vessel owners themselves. But background is not the only factor which fosters the rugged individualism which characterizes the average fisherman. From the viewpoint of vessel ownership, the commercial fishing industry is run by three clearly distinguishable, major groups with different and, to a large extent, diametrically opposed interests.

Fish processors and dealers represent an important group of vessel owners, particularly in the Gulf Area. Their importance is understated in the Gulf Area and California samples because the group may have financial control of a large number of vessels even though the captain may carry the ownership title. The business of running a fish processing plant or fish dealership is the primary occupation of this group. To them, vessel ownership and fishing is, in itself, an activity dominated by their primary business.

A second group is made up of vessel owners who consider fishing as their exclusive or primary source of livelihood. This group consists largely of captain-owners or owners who themselves manage one or a few vessels frequently with the aid of members of their immediate family or of relatives.

A third group is composed of owners with a primary occupation other than fishing, fish processing, fish distribution, or vessel management. This group represents the majority of absentee owners who are engaged in a great variety of occupations--skilled workers, artisans, technicians, businessmen, semiprofessionals, and professionals. Members of the group may have some business interest in the industry as suppliers or servicemen or no interest at all except the investment in vessels (see list of occupational activities of vessel owners in supplement referred to in Preface).

Although vessel ownership is a characteristic common to all three groups, interest in the fish market is quite divergent and even conflicting. In the center of the fish market is the group of fish dealers and processors who identify themselves as fish buyers. They enjoy a position of control by virtue of their limited number, the nature of their business, and their relative financial strength. They are able to import fish, or purchase domestically caught fish from the vessels they themselves own or control or from vessels owned by the other two ownership groups. The latter two groups represent the fish sellers at large who have little or no control over fish prices because they individually contribute a small fraction of the fish supply. Even the interests which the fish sellers have in the industry are not identical. While the owners for whom fishing is the primary occupation have their very livelihood at stake, the interests of the majority of the owners in the third group are largely peripheral, weak or dormant. Many absentee owners have little knowledge or interest in fishing operations and the problems of the industry. For others, fishing lies on the border line between being a secondary means of livelihood and a pastime.

The above sketchy description of the market structure may require numerous qualifications for marketing analysis and other purposes, but it adequately points out the absence of a homogenous group with identical interests. The type of fishing engaged in together with the type of gear used and other factors contribute to local or area differences in vessel-owner interests. Such conditions as these may in the past have adversely affected the insurability of commercial fishing vessels.

2. Navigation versus fishing. The physical inadequacies of most vessels and the lack of knowledge of seamanship among the majority of captains were amply demonstrated in the previous chapter. But unless the reasons for these differences are discussed, the real roots of the problem cannot be located and evaluated nor can effective remedies be found.

Evidently a vessel's physical inadequacies and a captain's lack of navigational skill are not a matter of cost alone. To some extent, they are a matter of function and practice or custom. The primary objective of the vessel and its captain is not navigation but fishing. Thus, in California, the vessel's stability apparently has been sacrificed to permit better location of tanks for water, bait, and fish; in New England devices for the crew's safety have been removed because, in the opinion of the captains, they hinder fishing operations. Thus, the primary requirement for a captain is that he be a good fisherman. Navigation is considered to be of secondary or sometimes tertiary importance. Inquiring into this subject, a field work supervisor in the Gulf Area reports that "while seamanship certainly was an important element in reducing insurance losses, unfortunately it was the third requirement that the interviewed owner was concerned with in selecting a skipper. Preceding it came fishing ability and ------- the ability to mend nets." Another field supervisor from the same area sums up the situation as follows: "No formal requirements exist for captains and I, for example, could put on a sailor hat and operate a boat if someone would hire me." Additional information indicates that a considerable number of captains in all three areas have risen from fishermen ranks with a rudimentary knowledge of the duties and responsibilities required for navigating and commanding a vessel.

The obvious conflict between the vessel's seaworthiness and the captain's seamanship, on the one hand, and fishing operations on the other is another aspect which contributes to an understanding of the commercial fishing vessel as an insurable risk. This conflict also presents an aspect of the insurance problem which deserves considerable attention.

3. The labor force of the industry. Finally, the caliber of the engineer and the crew is closely related to the insurability of many commercial fishing vessels, both for hull and protection and indemnity insurance. This situation again is partly the result of conditions in the labor market and partly the result of recruiting practices.

For many a fisherman, his occupation is not only a means to make a living, but it is a way of life. Cultural and linguistic barriers may also restrict the fisherman's mobility to other occupations. On the other hand, the unprecedented postwar economic prosperity in the country, coupled with the relative decline of economic opportunities in fishing, seems to have created labor shortages in some areas. Since 1950, many fishermen have been attracted to other more lucrative and less hazardous occupations, while entry of new workers has slowed down if not declined. Moreover, increased employment opportunities elsewhere drained the labor pool which otherwise might have been available for recruitment.

TABLE 18. - CLASSIFICATION OF VESSELS ON THE BASIS OF LOSS EXPERIENCE OF HULL AND PROTECTION AND INDEMNITY INSURANCE

Geographical area - vessel class	HULL INSURANCE				PROTECTION AND INDEMNITY INSURANCE			
	Paid losses per policy year	Loss ratio	Policy years	Studied vessels	Paid losses per policy year	Loss ratio	Policy years	Studied vessels
I. New England								
1. Best active wood[a]	$ 96	6.8	(180)	(52)	$ 27	3.1	(186)	(68)
2. Worst active wood[a]	1,795	72.5	(204)	(53)	2,137	111.5	(259)	(69)
3. Active steel vessels	761	14.8	(48)	(11)	-	-	-	-
4. Lost wood vessels[b]	8,723	437.7	(31)	(11)	-	-	-	-
All studied vessels	$ 1,489	65.9	(463)	(127)	$1,255	83.9	(445)	(137)
II. Gulf Area								
1. Best active wood[a]	$ 0	.0	(82)	(32)	0	.0	(39)	(17)
2. Worst active wood[a]	405	44.7	(102)	(33)	0	.0	0	0
3. Active steel vessels	1,231	73.9	(35)	(9)	-	-	-	-
4. Lost wood vessels	10,625	849.9	(8)	(4)	-	-	-	-
All studied vessels	$ 744	69.0	(227)	(78)	$ 0	.0	(39)	(17)
III. California								
1. Best active wood[a]	$ 22	0.6	(139)	(42)	0	.0	(170)	(43)
2. Worst active wood[a]	1,223	22.7	(159)	(42)	$ 1,384	331.9	(141)	(43)
3. Active steel vessels	3,465	32.0	(13)	(3)	-	-	-	-
4. Lost wood vessels	25,630	242.7	(24)	(9)	-	-	-	-
All studied vessels	$ 2,579	44.4	(335)	(96)	$ 627	148.8	(311)	(86)

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[a] Classes for P & I insurance include vessels irrespective of material of hull or active - lost status of vessel.

[b] Includes partial losses of lost vessels.

Source: For hull insurance, tables A-34 and A-60; for P & I insurance, Tables A-66 and A-82 in Appendix A.

The above developments may have contributed not only to higher labor costs in the industry, but also increased the bargaining power of organized fishermen and changed their attitudes. The following remarks of a leading vessel owner in New England are a case in point: "But the biggest trouble is the union demands. Every year, they come down for more; there is no question as to whether it is justified or available...and when I say, 'You are driving us out of business,' they just shrug their shoulders and say, 'If you go out of business, we'll go to work in a defense plant.'" Poor recruitment practices and high crew turnovers are additional factors which explain the low caliber of crews on many vessels.

B. VESSELS AND THE SELECTION OF INSURABLE RISKS

Insurance tends to increase hazard. Evidence is presented here which shows that this generally accepted proposition is valid.

1. Statistical techniques. In order to test the above proposition, a number of techniques were employed which require explanation.

First, it was necessary to rate all insured vessels on the basis of their loss experience record as recorded in claims files of insurance companies. This involved several computational steps for vessels insured for hull. The average amount of paid loss per policy year was computed by dividing all paid losses of each vessel by the number of policy years for which each vessel was insured. The resulting figure represented the average loss per policy and was used as an index for classifying all vessels. Since material of hull and total losses are important variables in hull insurance, active steel and lost wood vessels were separated from active wood vessels. Half of the latter group, having no reported losses or having the smallest losses (less than the median) per policy year, were designated as vessels with the best record; the other half, with the largest losses (more than the median) per policy year, made up the group of active wood vessels with the worst record. The same procedure was followed for vessels carrying protection and indemnity insurance, with only one difference. Active steel and lost wood vessels were not classified separately.

The fourfold rating of vessels carrying hull insurance and the twofold rating of protection and indemnity insurance appear in table 18. Average paid loss per policy year for each class in column 1 of the table shows that the loss experience of worst active wood vessels for hull insurance was much greater than that of the best vessels--$1,795 per policy compared to $96 in New England, $405 against no losses in the Gulf Area, and $1,223 compared to $22 in California. However, this significant difference is somewhat modified by the fact that the loss-and-expense-to-net-premium ratio, shown in column 2 of the table, was as high as the break-even ratio of the most efficient insurers only in New England--72.5. This ratio was below the break-even ratio of the least efficient insurers in the Gulf Area where it was 44.7 and in California with a figure of 22.7. The difference between best and worst vessels insured for protection and indemnity was highly significant both in terms of paid loss per policy and loss ratio in New England--$27 per policy and 3.1 loss ratio of best vessels, compared to $2,137 per policy and 111.5 loss ratio of worst vessels. In California, there were no losses among the best vessels as compared with $1,384 loss per policy and 331.9 loss ratio for the worst vessels. The above ratings will be used again later for other purposes.

Second, for verifying the proposition that insurance tends to increase hazard, further computations were necessary. The insurance participation ratio was obtained by dividing the percentage of noninsured vessels with a given characteristic into the percentage of insured vessels having the same characteristic. For example, in New England the 51.6 percent of captain-owned insured vessels (computed from table A-6 in Appendix A) was divided by the 82.4 percent of captain-owned noninsured vessels to give an insurance participation ratio of 0.63. This ratio means that the propensity to carry insurance for hull was low among captain-owned vessels since the proportion of captain-owned vessels among all insured vessels was smaller (51.3 percent) than the proportion of captain-owned vessels among all noninsured vessels (82.4 percent). A ratio equal to 1.00 means that the propensity to carry insurance on captain-owned vessels was equal to the propensity not to carry insurance, while a ratio greater than 1.00 would indicate a high propensity to carry insurance on captain-owned vessels.

Third, the loss experience ratio was obtained in a similar fashion with the only difference that active steel vessels were combined with best active wood vessels and lost wood vessels with worst active wood vessels. For example, the 47.6 percent of captain-owned best vessels (computed from table A-35 in Appendix A) was divided by the 42.2 percent of captain-owned worst vessels to produce a loss experience ratio of 1.13. This ratio means that the loss experience of captain-owned vessels whose hull insurance was studied was relatively favorable compared to noncaptain-owned

OF HULL AND PROTECTION AND INDEMNITY INSURANCE

Characteristic	PERCENTAGE RATIOS[a]								
	I. New England			II. Gulf Area			III. California		
	Insured ÷ noninsured	Best ÷ worst Hull[b]	Best ÷ worst P & I	Insured ÷ noninsured	Best ÷ worst Hull[b]	Best ÷ worst P & I[c]	Insured ÷ noninsured	Best ÷ worst Hull[b]	Best ÷ worst P & I
I. Ownership									
1. Captain owner	0.63	1.13	2.08	1.13	0.58	-	0.67	1.13	1.20
2. Dealer or processor	6.70	2.36	0.21	0.72	1.51	-	2.22	-	-
3. Absentee owner	2.43	0.78	0.64	1.71	1.13	-	3.77	0.84	0.83
II. Captain's interest									
1. Sole owner	0.58	1.52	1.46	0.89	0.90	-	0.35	2.07	0.34
2. Partner or stockholder	1.11	0.52	0.85	2.47	0.70	-	2.84	0.93	1.39
3. No interest	3.49	1.49	0.88	0.91	1.32	-	3.78	0.38	0.22
III. Vessels owned									
1. One-vessel owner	0.72	1.38	1.57	1.12	0.60	-	0.74	1.17	1.36
2. Many-vessel owner	2.78	0.65	0.48	0.92	1.53	-	2.68	0.77	0.62
IV. Owner's relation to crew									
1. Related to crew	0.52	2.03	6.80	1.12	0.89	-	0.54	1.34	0.78
2. Not related to crew	1.47	0.85	0.66	0.96	1.03	-	1.27	0.91	1.08
V. Mortgage on vessel?									
1. Vessel is mortgaged	3.26	0.95		2.91	0.78		3.14	0.64	
2. Vessel is not mortgaged	0169	1.05		0.67	1.08		0.81	1.39	

[a] Ratios were obtained by dividing the percentage of noninsured and worst vessels of indicated characteristic into the percentage of insured and best vessels, respectively.

[b] For hull insurance, best vessels include best active wood vessels and active steel vessels; worst vessels consist of active wood and lost wood vessels.

[c] No paid losses in the Gulf Area.

Source: For insured vs noninsured dichotomy, tables A-6, A-8 to A-10, and A-25; for hull insurance, tables A-36, A-38 to A-49, and A-51; for protection and indemnity insurance, tables A-69, A-71, A-72, and A-74 in Appendix A.

TABLE 20. - VESSEL'S HOME PORT RELATED TO INSURANCE COVERAGE AND LOSS EXPERIENCE OF HULL AND PROTECTION AND INDEMNITY INSURANCE

Home ports by area	Percentage ratios[a]		
	Insured : noninsured	Best : worst Hull[b]	Best : worst P & I[c]
I. New England			
1. Rockland, Maine	0.10	1.60	1.50
2. Portland, Maine	0.40	7.90	2.90
3. Gloucester, Massachusetts	4.35	0.96	1.37
4. Boston, Massachusetts	0.60	1.53	0.34
5. New Bedford, Massachusetts	3.62	0.53	0.57
6. Plymouth, Massachusetts	1.40	0.67	7.40
7. New London, Connecticut	0.41	2.36	10.50
II. Gulf Area			
1. Tampa, Florida	0.58	7.30	-
2. Biloxi, Mississippi	0.07	2.40	-
3. New Orleans, Louisiana	0.35	0.60	-
4. Morgan City, Louisiana	3.59	0.83	-
5. Galveston, Texas	1.33	1.20	-
6. Corpus Christi, Texas	1.36	0.90	-
7. Brownsville, Texas	25.30	0.91	-
III. California			
1. San Diego, California	2.59	1.19	1.50
2. Los Angeles, California	1.45	0.88	0.81
3. San Francisco, California	0.35	1.44	0.60
4. Eureka, California	0.18	0.01	2.30

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[a] Ratios were obtained by dividing the percentage of noninsured and worst vessels of indicated characteristic into the percentage of insured and best vessels, respectively.

[b] For hull insurance, best vessels include best active wood and active steel vessels; worst vessels consist of worst active wood and lost wood vessels.

[c] No paid losses in the Gulf Area.

Source: For insured vs noninsured dichotomy table A-20; for hull insurance table A-46; and for protection and indemnity insurance table A-67 in Appendix A.

TABLE 21. - NATIONAL ORIGIN OF VESSEL'S OFFICER PERSONNEL RELATED TO INSURANCE COVERAGE AND LOSS EXPERIENCE FOR HULL INSURANCE CLAIMS

	PERCENTAGE RATIOS[a]								
	I. New England			II. Gulf Area			III. California		
National origin of officer personal of crew[d]	Insured ÷ noninsured	Best ÷ worst Hull[b]	P & I	Insured ÷ noninsured	Best ÷ worst Hull[b]	P & I[c]	Insured ÷ noninsured	Best ÷ worst Hull[b]	P & I
"Italian"	0.49	0.92	1.09				0.80	1.54	1.62
"Portuguese"	1.24	1.58	21.25				2.37	0.62	1.39
"Canadian"	2.13	1.48	0.25						
"Scandinavian"	6.03	0.29	0.48						
"French" - "Italian"				1.23	0.92	-			
"American"				0.33	1.43	-	0.72	2.54	0.62
"Anglo-Saxon"				3.42	0.96	-	0.24	5.10	0.0
"Yugoslav"							8.70	0.45	0.86

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[a] Ratios were obtained by dividing the percentage of noninsured and worst vessels of indicated characteristic into the percentage of insured and best vessels, respectively.

[b] For hull insurance, best vessels include best active wood vessels and active steel vessels; worst vessels consist of worst active wood and lost wood vessels.

[c] No paid losses in the Gulf Area.

[d] The national origin of officer personnel was used for hull insurance and for protection and indemnity insurance in California; the national origin of crew was used for protection and indemnity insurance in New England.

Source: For insured vs noninsured dichotomy table A-11; for hull insurance, table A-41; and for protection and indemnity insurance, table A-75 in Appendix A.

TABLE 22. - FISHING PERIOD AND MAJOR TYPE OF FISHING GEAR RELATED TO INSURANCE COVERAGE AND LOSS EXPERIENCE OF HULL AND PROTECTION AND INDEMNITY INSURANCE

Fishing period - gear	PERCENTAGE RATIOS[a]								
	I. New England			II. Gulf Area			III. California		
	Insured ÷ noninsured	Best ÷ worst Hull[b]	Best ÷ worst P & I	Insured ÷ noninsured	Best ÷ worst Hull[b]	Best ÷ worst P & I[c]	Insured ÷ noninsured	Best ÷ worst Hull[b]	Best ÷ worst P & I
I. Fishing period									
One to six months	0.05	3.33	1.13	1.63	4.90	-	0.80	1.68	0.74
Seven to ten months	0.76	1.52	1.22	0.86	0.74	-	1.22	0.75	1.26
Eleven to twelve months	1.70	0.83	0.90	0.95	0.75	-	1.10	0.91	0.76
II. Type of fishing gear									
Trawls	1.70	1.04	1.14	1.04	0.95	-			
Dredges	1.03	0.34	0.58						
Hookand line							0.73	1.46	0.97
Purse seines							2.58	0.67	0.90
Other	0.26	4.38	0.88	0.78	1.45	-	1.46	0.69	1.25

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[a] Ratios were obtained by dividing the percentage of noninsured and worst vessels of indicated characteristic into percentage of insured and best vessels, respectively.

[b] For hull insurance, best vessels include best active wood and active steel vessels; worst vessels consist of worst active wood and lost wood vessels.

[c] No paid losses in Gulf Area.

Source: For insured vs noninsured dichotomy tables A-21 and A-22; for hull insurance, tables A-47 and A-48; for protection and indemnity insurance, tables A-77 and A-79 in Appendix A.

TABLE 23. - MAJOR FISHING GROUNDS AND KIND OF FISH CAUGHT RELATED TO INSURANCE COVERAGE AND LOSS EXPERIENCE OF HULL AND PROTECTION AND INDEMNITY INSURANCE

Fishing period - gear	PERCENTAGE RATIOS[a]								
	I. New England			II. Gulf Area			III. California		
	Insured ÷ noninsured	Best ÷ worst Hull[b]	Best ÷ worst P & I	Insured ÷ noninsured	Best ÷ worst Hull[b]	Best ÷ worst P & I[c]	Insured ÷ noninsured	Best ÷ worst Hull[b]	Best ÷ worst P & I
I. Fishing grounds									
New England coast	1.03	1.01	0.74						
Middle Atlantic coast	0.59	1.33	4.55						
Canada	6.20	0.51	0.47						
Gulf Area (North)				0.84	0.85	-			
Gulf Area (South)				2.17	1.73	-			
California - Mexico							0.84	0.94	1.06
Central - South America							16.30	1.20	.79
II. Kind of fish caught									
Cod, haddock	1.66	0.99	0.44						
Scallops	2.28	0.25	0.56						
Flounders	0.90	1.35	1.71						
Whiting	0.58	2.54	4.46						
Shrimp				1.06	0.94	-			
Tuna							2.22	0.90	0.90
Albacore							0.78	2.22	0.76
Other	0.82	1.06	1.26	0.71	1.45	-	2.09	0.97	1.44

[a] Ratios were obtained by dividing percentage of insured and worst vessels of indicated characteristic into the percentage of insured and worst vessels, respectively.

[b] For hull insurance, best vessels include best active wood and active steel vessels; worst vessels consist of worst active wood and and lost wood vessels.

[c] No paid losses in the Gulf Area.

Source: For insured vs noninsured dichotomy, tables A-23 and A-24; for hull insurance, tables A-49 and A-50;andprotection and indemnity insurance, tables A-78 and A-80 in Appendix A.

vessels, since the proportion of captain-owned vessels of all vessels with the best loss experience was greater (47.6 percent) than the proportion of captain-owned vessels of all vessels with the worst loss experience (42.2 percent). Ratios greater than 1.00 indicate a relatively favorable loss experience, and ratios smaller than 1.00 mean relatively unfavorable loss experience. The loss experience ratio for protection and indemnity insurance involved the same computations.

2. Insurance tends to increase hazard. A direct relationship was found between the insurance participation ratio and loss experience ratios which verifies the proposition that insurance tends to increase hazard. In the majority of cases, a high propensity to insure was associated with relatively unfavorable loss experience for either or both kinds of insurance, and *vice versa*.

For example, in table 19, New England captain-owned vessels had a low (0.63) propensity to carry insurance but relatively favorable loss experience for hull insurance (1.13) and much more favorable loss experience for protection and indemnity (2.08). In contrast, absentee-owned vessels in New England had a high (2.43) propensity to carry insurance but a relatively unfavorable loss experience for both hull (0.78) and protection and indemnity insurance (0.64). For vessels owned by fish dealers or processors, loss experience for hull insurance was relatively favorable (2.36), notwithstanding their high (6.70) propensity to carry insurance. This discrepancy may be explained by the fact that the fish dealer-processor group owns most of the steel vessels, which in New England had a very satisfactory hull insurance loss ratio of only 14.8 (table 18, column 2). For exactly the opposite reason, their loss experience ratio for protection and indemnity insurance was relatively unfavorable (0.21). Eight out of nine steel vessels owned by dealers or processors whose protection and indemnity insurance experience was studied were rated as vessels with worst loss experience (table A-69 in Appendix A). Although the above direct relationship was true for the Gulf Area with the exception of absentee-owned vessels, it was the captain-owned vessels which had high insurance participation and relatively unfavorable loss experience rather than the dealer or processor-owned vessels. This reversal is without doubt due to noninsurance extensively practiced by dealers and processors in the Gulf.

The reader will be able to find further verification to the previously mentioned proposition in tables 19 to 23. In a few instances, there is no direct relationship between insurance participation ratio and loss experience ratio because of statistical imperfections and other offsetting factors but on balance the proposition holds.

3. Remarks and observations on the selection of risks. Demonstrating that insurance has probably increased the hazard is another way of explaining why the loss experience of the majority of insurers has been unprofitable and the cost of insurance high. The proposition is also in line with the previous discussion in Chapter II on the importance of the owner's expectations leading to his decision to carry or not to carry insurance on his vessel. On the other hand, the fact that insurance probably has increased the hazard does not exclude the likelihood of adverse selection of risks among vessels by individual insurers in the first place. The cynical remarks of a noninsured owner from the Gulf Area amply illustrate the point: "I am not planning to burn my boat; why should I insure it?" Equally indicative are the remarks of a noninsured New Englander: "The fellows who do go to court are all on insured vessels, and the owner says: 'I pay plenty for insurance. Go ahead and collect what you can. The insurance company is paying the bill.'"

Besides showing a probable increase in hazard and adverse selection, the loss experience rating and the ratios are useful tools of analysis in another respect. They indicate the vessel characteristics which are associated with a satisfactory or unsatisfactory loss record.

It will be noted, for example, that Rockland and Portland, Maine, and New London, Connecticut had relatively favorable loss experience ratios (more than 1.0), while most Massachusetts ports had relatively unfavorable ratios (less than 1.0) for both hull and protection and indemnity insurance (table 20). The port of Boston was an exception with relatively favorable hull insurance loss experience ratio but with a relatively unfavorable protection and indemnity ratio. The Boston hull experience may be partly explained by the fact that a disproportionate number of insured active steel hull vessels operate from that port. Commensurably, the relatively unfavorable protection and indemnity insurance experience may be attributed largely to the fact that all large insured steel vessels in the New England sample with depersonalized relations between owner and crew had Boston as the port of their operations. It is not mere coincidence that Boston and New Bedford, which are considered important centers of union activities, were also the only ports with unfavorable protection and indemnity insurance loss experience ratio. Gloucester, the third center of organized labor in New England, might have shown unfavorable experience ratio had it not been for the likelihood that the Gloucester sample includes a considerable number of vessels operated by kinship groups. Similar observations may be made for the Gulf Area and California from the ratios of table 20.

TABLE 24. - DIFFERENCE IN THE AGE, GROSS TONNAGE, AND SIZE OF CREW OF VESSELS CLASSIFIED ON THE BASIS OF LOSS EXPERIENCE OF HULL AND PROTECTION AND INDEMNITY INSURANCE

Geographical area - vessel class	ARITHMETIC MEANS							
	Hull insurance				Protection and indemnity insurance			
	Age-1956 (Years)	Gross tonnage	Market Value (Thousands)	Studied vessels a/	Age-1956 (Years)	Gross tonnage	Reported crew	Studied vessels b/
I. New England								
1. Best active wood c/	18	46	$ 24.5	(52)	20	51	6.6	(68)
2. Worst active wood c/	16	81	52.0	(53)	19	99	8.9	(69)
3. Active steel vessels	18	226	171.7	(11)	-	-	-	-
4. Lost wood vessels	32	50	12.6	(11)	-	-	-	-
All studied vessels	18	77	45.0	(127)	20	75	7.8	(137)
II. Gulf Area								
1. Best active wood c/	13	37	$ 20.4	(32)	9	50	3.1	(17)
2. Worst active wood c/	11	37	20.8	(33)		0	0	
3. Active steel vessels	7	98	72.4	(9)	-	-	-	-
4. Lost wood vessels	12	50	17.0	(4)	-	-	-	-
All studied vessels	11	45	27.3	(78)	9	50	3.1	(17)
III. California								
1. Best active wood c/	14	126	$ 72.9	(42)	16	145	8.6	(43)
2. Worst active wood c/	14	145	96.7	(42)	15	144	7.2	(43)
3. Active steel vessels	8	396	376.7	(3)	-	-	-	
4. Lost wood vessels	21	115	97.0	(8)	-	-	-	
All studied vessels	14	142	96.5	(95)	16	144	7.9	(86)

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a/ Sample size smaller than the quoted one for market value.
b/ Sample size smaller than the quoted one for reported size of crew.
c/ Classes for P & I insurance include vessels irrespective of material of hull or active - lost status of vessel.
Source: For hull insurance, tables A-35 and A-52; for P & I insurance, table A-68 in Appendix A.

Further information on the geographical distribution of risks is offered in tables 21 to 23. In many cases, the association of a vessel characteristic with loss experience ratio may be spurious, due to several other variables. In some instances, however, the consistency of relationship is striking. It is interesting to note that vessels with "Scandinavian" officer personnel and crews (table 21), equipped with dredges (table 22) and engaged in scalloping (table 23), had as much relatively unfavorable loss experience ratios for both hull and protection and indemnity insurance as all vessels whose home port was New Bedford.

Again, with regard to favorable or unfavorable loss record of vessels, some differences in the physical characteristics of vessels are interesting. For example, lost wood vessels, with a hull insurance loss ratio of 437.7 in New England and 242.7 in California (table 18) were likely to be much older--32 years old in the former and 21 years old in the latter area--than active wood vessels--17 years old and 14 years old, respectively (table 24). From the viewpoint of rating, it is equally interesting that the average age of lost wood vessels in the Gulf Area (12 years old), with a loss ratio of 849.9, did not differ significantly from the average age of best (13 years old) and worst active wood vessels (11 years old).

In the case of protection and indemnity insurance, worst vessels were larger than best vessels in New England--99 average gross tons and 8.9 crewmen, compared to 51 gross tons and 6.6 men--with no significant difference in average age of vessel (table 24). In contrast, there was no significant difference between best and worst vessels in California with regard to age and gross tonnage, although the average reported crew of best vessels was 8.6 men compared to 7.2 men on board the worst vessels.

Reported crew size seems to be associated with the different practices for determining premium in the two areas. It should be remembered that, as far as it was possible to ascertain, protection and indemnity insurance premium was largely determined on the basis of crew size in New England while in California, size of crew seemed to be of little or no consideration. However, there is no way of finding out whether crew size differences in New England and nonconsideration of crew size in California are the result of premium determining practices or whether these practices are the result of experience.

TABLE 25. - VALUE OF FISH AND SHELLFISH LANDINGS AND LOSS EXPERIENCE OF VESSELS LOST AND OF PAID LOSSES FOR HULL AND PROTECTION AND INDEMNITY CLAIMS

Total loss of vessel			Hull insurance			Protection and indemnity insurance		
Years	Landings[a]	Vessels[b]	Years	Landings[a]	Losses[c]	Years	Landings[a]	Losses[c]
N E W E N G L A N D								
1949, 53-55	$58.4	23.3	1953-54	$58.9	$2,490	1953-54	$58.9	$ 794
1950-52	65.1	12.3	1950-52	65.1	756	1950-52	65.1	1,716
G U L F A R E A								
1949-50	$50.1	22.5	1950,52,53	$67.9	$ 273			
1951-52	65.9	28.0	1951, 1954	68.1	1,313			
1953	85.2	37.0						
1954-55	75.6	55.0						
C A L I F O R N I A								
1949, 53, 55	$61.7	20.7	1951-53	$63.9	$1,521	1951, 53-54	$64.5	$ 306
1951, 1954	67.0	27.5	1950-54	74.5	4,348	1950, 1952	73.7	1,030
1950-52	73.7	41.0						

[a] Value of fish and shellfish landings per year in millions of dollars.

[b] Number of vessels lost per year from the total active vessel population in each geographical area.

[c] Average paid losses per policy year.

Source: Table A-65 in Appendix A.

C. THE INSURANCE PROBLEM AND BUSINESS OUTLOOK

Inasmuch as the insurance cost is part of the cost of fishing operations, a full understanding of the insurance problem requires an examination of the general business outlook in the commercial fishing industry. The inquiry into whether and how the insurance problem is related to over-all business conditions was made through an analysis of the relation of gross receipts from fish landings to losses of insurers. A discussion of the implications of this relationship, an examination of vessel population turnover, and a discussion of the vessel owner's feelings about business conditions follows.

1. Relationships between receipts and losses. Insurance people maintain the thesis that a high, inverse correlation exists between business conditions in the industry and severity of hull insurance accidents. During unprofitable years losses rise, and during profitable years losses decline.

In order to test the validity of this hypothesis, gross receipts from fish landings were related with the number of vessels lost and claim losses of insurers in table 25. In New England the hypothesis was verified. During the six-year[3] period, 1949-55, as many as 23.3 vessels were lost per year over the three years with the lowest receipts from landings--$58.4 million per year, while as few as 12.3 vessels per year were lost during the three years with the highest receipts--$65.1 million per year. The same inverse relationship prevails with receipts and hull insurance claim losses paid by insurers. During 1953-54 claim losses for hull insurance were as high as $2,490 per policy year and receipts as low as $58.9 million per year, while during 1950-52 losses were as low as $756 per policy year and receipts as high as $65.1 million per year.

The data do not seem to verify this hypothesis in the Gulf Area. In fact, the relationship of receipts and hull insurance claim losses is direct instead of inverse. The observation, however, is superficial, and there are a number of reasons which may explain why the data fail to show an inverse relationship. In the first place, receipts in the Gulf Area were continuously rising throughout the period studied except for the last year, 1954. Therefore, the decline did not last long enough to show its effect on the accident records. Furthermore, if the year 1950 is excluded from the averaging as an abnormal year (table 25), claim losses for hull insurance averaged as low as $336 per policy year and receipts as high as $76.7 million per year during 1952-53, while during the years 1951 and 1954 losses averaged as high as $1,313 per policy year and receipts as low as $68.1 million per year (computed from table A-64 in Appendix A). Secondly, the number of vessels lost and receipts per year kept rising uninterruptedly in the Gulf Area from as low as 22.5 vessels and $50.1 million receipts in 1949-50 to as high as 37 vessels and $85.2 million receipts in 1953. But in 1954-55, when receipts fell from the peak of the previous year to an average of $75.6 million, vessel losses jumped to as many as 55 vessels per year (table 25). Finally, the unusually heavy losses since 1954 were further verified by a leading insurer in the Gulf Area who reported heavy hull insurance losses during 1954, 1955, and part of 1956 with a loss ratio averaging as high as 139.2.

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[3] Seven calender years--six fiscal years.

The situation is less clear in California where the data show direct relationship between receipts and vessel or claim losses. This does not mean, however, that the hypothesis has been impugned. First, the decline of receipts was relatively greater on receipts from fish landings of species other than tuna or tunalike fish. Considering the period 1949-54, receipts from landings of tuna or tunalike fish averaged 71 percent of $77.1 million receipts per year in 1949-50 and as high as 77 percent of $65.5 million receipts per year in 1952-54. Since as much as 70 percent of the studied policy years in California were from vessels engaged in tuna or tunalike fishing, loss experience may have been affected less adversely than might have been otherwise possible. Second, gross receipts alone do not determine profits. It has already been shown in Chapter III that the hull insurance cost in California rose less during the five-year period than elsewhere and it is likely that other operational costs in that area behaved similarly. Third, in California the loss ratio for hull insurance averaged 44.4 percent of earned premiums, which is below the break-even ratio of the least efficient insurer and reports from many quarters indicate that experience has been relatively more satisfactory than elsewhere. In fact, favorable hull insurance experience may have been due largely to the Commercial Fishermen's Interinsurance Exchange in San Pedro which very clearly illustrates what can be accomplished by a sound cooperative effort among vessel owners. Finally, the period 1950-54 may not be appropriate for showing inverse relationship between receipts and losses in California.

The association of receipts and amount of loss paid per claim of protection and indemnity insurance is direct in both New England and California (table 25). Most likely, the direct association is largely spurious, especially in New England, since the frequency and severity of protection and indemnity insurance claims may be profoundly affected by institutional arrangements within as well as without the fishing industry. These matters will be discussed later in this chapter.

2. Implications of inverse association of receipts and hull insurance losses. In the meantime, let us inquire into the far-reaching implications of an inverse relationship of receipts and hull insurance losses. During declining receipts, frequency and severity of hull insurance accidents may increase somewhat because the vessel owner may intensify his fishing operations and, at the same time, postpone some of the maintenance expenses normally required for the upkeep of the vessel. But developments such as the above cannot possibly explain wholly the adverse experience of insurers, especially in New England and Gulf Area and, to a lesser extent, in California.

The possibility that a vessel owner may consider the hull insurance contract as a means of overcoming impending financial difficulties either partially or wholly cannot be overlooked. Sometimes moral hazard is loosely defined to include accidents arising from unintentional human action such as negligence. But usually moral hazard implies an increase in the expectation of loss because of changes in the intentions and character of the insured, irrespective of the nature of the insured property. Since the intent of the insured owner is the criterion, it is almost impossible to prove moral hazard. However, its probable presence is confirmed by both the vessel owners themselves and insurance people.

Whether a hull damage or a damage to machinery or equipment is covered by insurance is frequently a matter of circumstances subject to a wide range of interpretation. According to one New England owner, "Hull insurance premiums are too high due to exorbitant charges made by all the boatyards and phony claims." At times of falling receipts and mounting bills, the temptation to take advantage of the provisions of the insurance contract may be very strong. An owner from the Gulf Area remarks: "Too many boat owners take advantage of the insurance company, and therefore, rates are too high." In the opinion of an interviewed insurance surveyor in New England, "Approximately 90 percent of repairs or inspection of hull and machinery paid by insurance companies should not ordinarily be paid."

The probable presence of moral hazard in cases of total loss of vessel is also confirmed. The poignant remarks of a noninsured owner from the Gulf Area previously quoted are pertinent to the subject. "I am not planning to burn my boat; why should I insure it?" A California vessel owner who justifies the presence of moral hazard remarks as follows: "With the high values placed on boats as compared to market value, there is little incentive to save the boat that had an accident." A New Englander is quite succinct: "Honest owners are paying for deliberate losses and scuttlings, which is ridiculous." A New England surveyor describes the situation in quite explicit terms: "I can tell you which vessels will sink in a short time by the following indications:

TABLE 26. - VESSEL TURNOVER IN THE SAMPLE AND IN THE POPULATION

Geographical area - new and lost vessels	Turnover in the sample			Turnover in the population (estimated)		
	Number of vessels	Gross tonnage	Net tonnage	Number of vessels	Gross tonnage	Net tonnage
I. New England						
1. Vessels built in 1950-54	16	1,004	652	57	3,591	2,337
2. Vessels lost in 1950-54	26	1,251	747	93	4,464	2,697
Decrease (-)	-10	-247	-95	-36	-873	-360
II. Gulf Area						
1. Vessels built in 1950-54	39	2,051	1,165	384	20,352	11,520
2. Vessels lost in 1950-54	18	455	241	178	4,450	2,314
Increase (+)	+21	+1,596	+924	+206	+15,902	+9,206
III. California						
1. Vessels built in 1950-54	29	3,864	1,986	152	20,216	10,336
2. Vessels lost in 1950-54	30	1,934	978	157	10,048	5,181
Increase (+)		+1,930	+1,008		+10,168	+5,155
Decrease (-)	-1			- 5		

Source: Table A-11 in Appendix A.

overinsurance, low earnings of vessel, poor housekeeping, mortgage rather high, and unpaid bills. Many vessels seem to have been lost under circumstances which smack of the presence of moral hazard. At the time of the accident the crew is smaller than normal and usually consists of relatives, not outsiders; in two-thirds of the cases of total loss of the vessel, another vessel is nearby to take care of the crew and weather during the time the accident occurred is smooth." Although his experience was limited to one New England port, his story illustrates the probable presence of moral hazard.

All in all, the information on hand suggests that during 1950-54 moral hazard had adversely affected the insurability of commercial fishing vessels. Within each area, loss experience from moral hazard differs greatly from port to port; yet, none of the responding insurers in all three geographical areas questioned the probable presence of moral hazard. By comparison, the adverse effect of moral hazard on the insurability of vessels seems to have been worse in New England than in the Gulf Area and California.

3. Vessel population turnover. Further evidence of the insurability of commercial fishing vessels is presented in table 26. Vessel turnover in the population of each area during 1950-54 was estimated by "blowing up" the number and average tonnage of newly built and lost vessels which were included in the sample. Differences between estimated and actual figures are not likely to be significant for two additional reasons besides the representativeness of the samples. First, the sample represents a relatively large portion of the vessels in the ports of each area--about 31 percent in New England, 11 percent in the Gulf Area, and 21 percent in California (computed from table A-1 in Appendix A). Second, the actual enumeration of all commercial fishing vessels which were lost during the five-year period differs only a little from the estimated figures--89 vessels actually lost compared to 93 estimated losses in New England, 178 against the same figure in the Gulf Area, and 158 to 157 in California (actual losses in table A-65 Appendix A and estimated losses in table 26).

It will be seen that during 1950-54, New England's vessel population declined by 36 vessels, amounting to a total of 873 gross and 360 net tons. In contrast, the vessel population in the Gulf Area increased by 206 vessels totaling 15,902 gross tons and 9,206 net tons. The vessel population in California declined by 5 vessels but since newly built vessels were larger than lost vessels, tonnage increased by 10,168 gross tons and 5,155 net tons. Most likely, the actual decline of the New England vessel population was greater than the estimated figures indicate because of transfers. Assuming that the registered vessel population in New England and California ports closely represents the vessels operating from the same ports, net losses, i.e., newly built minus lost vessels, should be augmented by the net transfers to the area minus transfers from these areas. Net transfers from New England and California may have been substantial during the years 1950-54, especially if transfers are measured in terms of tonnage.

The above findings lead to a number of observations which may affect the insurability of commercial fishing vessels in the long run. First, actual decline in the number of vessels in New England indicates a shrinkage in the number of insurable risks and an aging population, both of which further aggravate the hull insurance problem. Second, the fact that newly built vessels in all three areas were, on the average, larger than lost vessels may somewhat offset the previous effects in New England and may improve the insurability of vessels for hull insurance in the other two areas. The observation may be true to the extent that newly built vessels are better risks than lost vessels. Finally, newly built, larger vessels may further depersonalize owner-crew relations and may adversely affect the insurability of vessels for protection and indemnity insurance. This development may be especially important in California.

These findings clearly show how the hull insurance problem and business conditions are tightly dovetailed. First, it is evident that during 1950-54 business conditions were less favorable and consequently the insurance problem more acute if not almost a crisis in New England. Second, the decrease in total capacity (vessels-tonnage) clearly indicates that the New England industry is undergoing a serious period of postwar adjustment. Reduction of excess capacity is likely to continue as long as adverse marketing conditions prevail for the domestic fishing industry. Third, since it was shown that unfavorable economic conditions adversely affect the insurability of commercial fishing vessels, the insurance problem is likely to continue until the New England fishing industry has reached a new equilibrium between the supply of and demand for its fishery products. Finally, if similar economic conditions develop in the other two areas, the hull insurance problem is likely to become more serious there.

4. The insurance problem and the vessel owner's business outlook. How the vessel owner understands his hull insurance problem has been discussed extensively in Chapter II. No more need be said here except that the vessel owner has a good understanding of the close association between economic conditions in the industry and the insurance problem. It is not surprising that

an overwhelming majority of responding owners were in favor of government help--90 percent in New England, 68 percent in the Gulf Area, and 90 percent in California (table A-130 in Appendix A,"don't knows" were grouped with responses against government help). The significant part of this response lies in the fact that government subsidies, general financial assistance, control of fish imports, price supports, and the like were more popular than investigation of rates and repair charges, Coast Guard inspection of vessels, education of vessel personnel, and similar suggestions.

Betterment of business conditions rather than other measures for solving the insurance problem seem to reflect largely the sentiments of vessel owners who represent sellers of fish. No other statement sums up their position more eloquently than the following from a Californian: "If the Government would solve the perilous conditions that Japanese imports have caused, the high premiums now existing could be paid without much difficulty." For reasons well known to them, their business outlook is a pessimistic one. They maintain the opinion that the United States Government is unable or unwilling to take direct measures designed to raise receipts from fish landings. Consequently, they are doubtful as to whether the Federal Government would or could do something to solve the insurance problem. On the other hand, although vessel owners who represent buyers of fish may recognize the relationship between business conditions and the insurance problem, they are inclined to favor a hands-off policy for the Government and direct measures designed to improve safety standards, to educate vessel personnel, and other similar suggestions.

The above analysis attempts to reflect the general sentiments which were likely to prevail among vessel owners with conflicting interests in the fish market. Departures from these two basic positions were not infrequent and the conflict between the adherence to a philosophy of laissez-faire capitalism on the one hand, and stark reality, on the other, was quite evident on both sides. Perhaps a few of the remarks of a New England vessel owner and buyer of fish are most appropriate: "Government is best which governs least. But where private enterprise becomes unprofitable and unable to cope with the situation--at this point the government should step in." Similar sentiments are expressed by a California absentee owner: "I do not like to see the Federal Government in any business any more than necessary; but if the authority is to survive, there must be a quota on foreign, frozen tuna or the Government should assist the industry in some manner."

D. THE PROTECTION AND INDEMNITY INSURANCE PROBLEM

Previous discussions on the accident records, the physical inadequacies of most vessels, the lack of knowledge or disregard of fundamental principles of safety, the poor caliber of crews, and labor recruiting practices in the industry have already thrown some light on the problem of protection and indemnity insurance. Yet, only the symptoms of the unprofitable loss experience of insurers have been examined. What lies behind the physical and human circumstances which surrounded each accident? How have these forces adversely affected the insurability of commercial fishing vessels?

If remedies are to be found which go beyond the cure of symptoms, the protection and indemnity insurance problem requires further scrutiny. The owner's liability for accidents of crews and the role of labor are discussed here, while the role of the middleman who takes part in the adjustment and settlement of claims will be discussed in the final chapter of this report.

1. Receipts from fish landings and claim losses for protection and indemnity insurance. The direct association between receipts and claim losses has already been shown in table 25. Although this association is likely to be largely spurious, a few observations on the subject are worth considering.

To some extent, the direct association may be due to fishing operations requiring greater exposure of crews to risks involved in longer or more frequent trips for larger receipts, assuming fairly stable prices. The above reasoning is subject to numerous qualifications, but may explain the experience in California more than in New England. On the other hand, it may be possible to find a stronger argument for an inverse association between receipts and losses in the manner in which most fishermen are compensated for their labor. Since a 40-60 lay or other similar method of sharing largely determines their compensation, wages depend partly on some operational costs but mostly on receipts from fish landings. On this basis, it would be more logical for a fall in receipts to be associated with a rise in claim losses inasmuch as fishermen might try to compensate losses in wages with larger insurance benefits. Then why is the association direct? One plausible explanation is that claim losses for protection and indemnity insurance are directly affected by receipts from fish landings over periods longer than a year, perhaps as long as the whole five-year period under study. This argument is consistent with the fact that evidently no problem existed prior to 1950 in spite of favorable developments in jurisprudence. Another explanation may be that falling receipts have adversely affected the insurability of vessels in an indirect manner by unfavorably influencing labor relations. Both explanations seem to be consistent with the conclusion that the direct association of yearly receipts and claim losses is largely spurious due partly to the existing maritime legislation and partly to the attitudes and conduct of labor within the industry and to the middlemen (lawyers, brokers, etc.) who participate in the settlement of claims from without.

2. The owner's liability for accidents of crewmen. In order to understand the basic sources of the protection and indemnity insurance problem it is necessary to discuss briefly the major features which determine the liability of the vessel owner for accidents, sickness, or death of crewmen.

The shipowner's liability is determined by the maritime law as modified by that part of the Merchant Marine Act of 1920, commonly called the Jones Act, which made the Federal Employers' Liability Act of 1908 applicable to seamen. Under the provisions of this legislation, the shipowner is liable on three counts: for negligence, for unseaworthiness, both of which are decided by jury, and for maintenance and cure which is normally heard by the court sitting in admiralty. The owner's liability is unlimited, and the injured seaman's lost wages are a preferred lien on the assets of the physical or legal entity which owns the vessel. In other words, the maximum amount which an injured seaman can receive is not limited, and the jury's award to the crewman must be satisfied in full before other creditors of the owner are honored.

Although the above provisions are quite onerous by themselves, what makes the matter worse is the fact that it is left to the courts to decide whether and under what circumstances the owner has been negligent or the vessel unseaworthy and therefore liable for injuries, sickness, or death of a crewman. In fact, it is quite legitimate to argue that jurisprudence of the 1930's and later years prepared the ground for the rise of the protection and indemnity insurance problem in the fishing industry by making a more liberal interpretation of the provisions of the existing maritime legislation.

In brief, jurisprudence widened the scope of the law in ways which have adversely affected insurability of commercial fishing vessels. First, although the law refers to seamen in general, the courts have held that a fisherman has the status of a seaman. The fact that a fisherman usually works on a share basis does not constitute adequate grounds for considering the fishing trip a joint venture. Therefore, a fisherman can sue for personal injuries or death under the Jones Act and for maintenance and cure under the general Admiralty Law (Cf. 1932 A.M.C. 835; 1933 A.M.C. 1514; 1938 A.M.C. 1505; and 1940 A.M.C. 127). Second, the courts have interpreted broadly the phrase "in the service of the ship" by holding that seamen ashore on leave were in the service of the vessel and that shore leave was part of the seaman's employment. Thus, maintenance and cure has been granted to seamen who were injured or became ill offshore in pursuit of their own pleasures and relaxation (CF. 138 Fed (2d) 801; 69 F. Supp. 755; 1945 A.M.C. 493; 1947 A.M.C. 411; 1948 A.M.C. 1561). Although these particular court decisions did not involve commercial fishing vessels, application of this ruling to cases involving fishermen was a matter of time.

The provisions of maritime legislation and the above developments in jurisprudence profoundly changed the character and nature of claims for personal accidents. In the first place, the amounts which the courts awarded to fishermen were sometimes widely different for almost identical accidents. Second, some court awards were unusually large compared to the earnings which the injured fisherman lost or his disability and the vessel owner's ability to pay. Third, since no legal provision designated the diseases for which compensation was awarded, fishermen suffering from chronic organic diseases, which normally would not be considered occupational, repeatedly received court awards. Finally, as a result of the above developments, compensation for personal accidents through litigation became a speculative venture with the outcome quite uncertain and depended upon the sincerity of witnesses, the diagnostic expertness of doctors, the agility of lawyers, and the philosophy or sympathies of the jurors. But in spite of uncertainties, the usually long drawn legal dispute was welcomed because in each litigation there was an expected small fortune at stake.

For fuller appreciation of the above discussion, the reader is referred to the findings presented in previous chapters on cost of insurance, especially amount of insurance, frequency and severity of accidents, and kinds of diseases.

3. The role of labor. Developments in the legal field were not the only source of the problem. The findings of this survey lead to the conclusion that the attitudes and conduct of labor, and organized labor in particular, share a good deal of the responsibility for the problem in protection and indemnity insurance.

The provisions of maritime law and jurisprudence are almost equally applicable to all three regions under study. Yet, loss experience reaching nearly alarming proportions seems to be concentrated only in New England. During 1950-54, loss experience in the Gulf Area was very favorable, while in California the unprofitable loss ratio of insurers was largely due to comparatively low premiums charged rather than to large claim losses. For the sake of comparison, for every 10 policy years studied in New England there were 19 claims totaling $12,550 losses, while in California these figures were 2 and $6,270, respectively. The larger average losses per claim in California are the result of larger deductibles for personal injuries and to a relative absence of small or petty claims rather than an indication of severity of losses. Furthermore, within the New England Area the centers of the protection and indemnity insurance problem are located in the Massachusetts ports where organized labor is strongest; namely, Boston and New Bedford principally and, to a lesser extent, in Gloucester (Cf. table 20 and discussion in text).

The concentration of the problem in the New England strongholds of organized labor is not a mere coincidence and requires further explanation. The relative absence of the problem in other New England ports and in the other two areas can be partly explained in terms of the close personal relations between vessel owner and crew. When a vessel is operated by a kinship group or when relations are intimately personal as a result of crew loyalty to a captain-owner, the likelihood that a crewman will take advantage of legal provisions for an accident is very small indeed, almost nonexistent. In fact, this situation was a primary factor for noninsurance in all three areas, especially in the Gulf Area, and largely explains the almost complete absence of the problem in several specific ports. Furthermore, lack of knowledge of the advantages offered by the law, a sense of being part of the venture and sharing its fruits, moral and ethical standards associated with professional pride, fear of ostracism by fellow fishermen, and other similar traditionalistic ways of doing things seem to account for the absence of the problem in many ports in spite of depersonalized relations between vessel owner and crew. Nor was the presence of organized labor in itself found to be an important factor as long as relations with management were amicable. It is the attitudes and the conduct of labor which count most for the unprofitable loss experience of protection and indemnity insurers.

The adverse effect of attitudes and conduct of organized labor has come from many quarters. Maritime legislation, declining earnings from fish landings, probable encouragement by lawyers, doctors, and union officials, and extraordinarily large awards by courts have been responsible along with conditions closely related to fishing operations. Labor shortage has been one. Here is how a marine surveyor described the labor situation in New England: "The labor situation is such that you have to hire unskilled help, and unskilled help invariably gets in trouble. Scallopers have the most difficulty in hiring experienced help. Experienced fishermen call scalloping 'farming' and do not like to do it. Scalloper crews generally have no moral standards. Any injury and they get themselves a lawyer." Some owners have contributed to the problem by encouraging their crews to go to court. A previous quotation is also appropriate in this instance. "I pay plenty for insurance. Go ahead and collect what you can. The insurance company is paying the bill." Captains have favored the fishermen's side because they themselves were members of the union. A leading vessel owner of a New England port described this situation as follows: "When the captain is a member of the union, this creates great difficulty in cases that go before the courts. The captain cannot testify against his crew. If he does, he would lose their respect, and the union members would refuse to work on his vessel." Deadlocks in the tug of war between management and labor were also important to the problem, as the following situation indicates. According to an informant well acquainted with labor disputes in the industry, "The union has been in favor of safety for its members. The owners have opposed any safety measures until they can have a required physical examination of all crew members. The union opposes the physical examination because it would throw many of their members out of work, since they could not pass such examinations." There seems to be no end to the situations, forces, and factors which adversely affected the attitudes of organized labor.

4. Is workmen's compensation the remedy? The paramount importance of existing legislation as the ultimate source of the protection and indemnity insurance problem is well illustrated by the repeated pleas of vessel owners for the repeal of the Jones Act which extends the provisions of the Federal Employers' Liability Act of 1908 to seamen. From the survey of owners in all areas, workmen's compensation was the most frequently suggested substitute (table A-130 in Appendix A).

The interest in workmen's compensation was not limited to vessel owners alone for many insurance men, especially outside New England, expressed opinions in favor of workmen's compensation for the fishermen. The major argument of the opponents to such a measure is that workmen's compensation is likely to be more costly than the present system. This position is shared by some insurance people and also by a few vessel owners. On the other hand, labor leaders do not seem to object, as a matter of principle, to the introduction of workmen's compensation in the industry, but they are inclined to welcome a change on condition the workmen's compensation law would duly recognize the special hazards of the occupation.

Whether workmen's compensation for the fishermen would be less costly than the present system is not part of this survey. However, the inquiry into the protection and indemnity insurance problem shows clearly that the application of an employer's liability system as extended to owner's of commercial fishing vessels by the Jones Act is unrealistic because it disregards completely the financial, economic, and operational characteristics of the industry. Furthermore, the system in itself is unjust because it is wasteful and slow and it fosters misunderstanding and bitterness between employer and employees. Moreover, it encourages the use of dishonest methods by both parties because court awards often are not in proportion to the employee's injury or need (Cf. Crystal Eastman, Work Accidents and the Law as quoted by Albert H. Mowbray and Ralph H. Blanchard, Insurance, It's Theory and Practice in the United States. New York: McGraw-Hill Book Company, Inc., 4th ed., 1955, p. 152). Although any new piece of legislation seems to be better than the present system, the subject requires further study before any decision can be made.

E. SUMMARY AND CONCLUSIONS

Economic conditions, the structure of the commercial fishing industry, and existing maritime legislation have adversely affected the insurability of vessels and contributed to the insurance problem in a number of ways, as follows:

1. The presence of conflicting interests among vessel owners and their highly diversified backgrounds seriously hinders the growth of group loyalty and cooperation. In the past, the divergence of production and market interests may have adversely affected the insurability of commercial fishing vessels.

2. The physical inadequacies of most vessels and the lack of knowledge of good seamanship among the majority of captains are not a matter of operational cost alone but also a matter of function and practice or custom. The obvious conflict between the vessel's seaworthiness or the captain's seamanship and fishing operations is an aspect of the insurance problem deserving serious consideration.

3. Labor shortages, poor recruiting practices, and high labor turnover in some types of fishing are important factors not only in the rise of the problem in hull insurance, but more particularly in protection and indemnity insurance.

4. It was found that the incidence of insurance has increased the hazard. There is a highly significant direct association between the occurrence of insurance and loss experience. High propensity to insure is associated with relatively unfavorable loss experience and *vice versa*.

5. An inverse relationship between loss experience for hull insurance and fishermen's gross receipts was found in New England and to a lesser extent in the Gulf Area. Although the data in California fail to show such an inverse relationship, the close association between the occurrence and severity of accidents and economic conditions elsewhere throws abundant light on the long run forces which underlie the insurance problem. The importance of moral hazard differs from area to area and from port to port, but its probable presence is confirmed everywhere by vessel owners and insurance people alike. The vessel owner clearly understands the close association between economic conditions in the industry and the hull insurance problem. Declining income results in declining maintenance of his vessel. His business outlook is a pessimistic one. Although government assistance is welcomed by a large majority of owners and suggestions for measures to improve safety standards, rating, and adjustment of claims are numerous, the general concensus is that nothing short of measures to improve economic conditions in the industry can alleviate the hull insurance problem.

6. In contrast, the protection and indemnity insurance problem has its roots on the one hand, in the onerous maritime legislation, especially the Jones Act, which determines the vessel owner's liability and, on the other hand, in the attitudes and conduct of labor within the industry, especially organized labor. The paramount importance of existing maritime legislation, especially the Jones Act, as a single and ultimate source of the problem in protection and indemnity insurance did not escape the vessel owner's attention. Pleas for the repeal of the Jones Act and extension of workmen's compensation to fishermen are the most frequently suggested solutions to the problem.

CHAPTER VI

INSURANCE RATING AND PRACTICES AND THEIR EFFECT ON LOSS EXPERIENCE

In previous portions of this report, some of the reasons for the largely unprofitable loss experience of insurers have been discussed. In this last section of the report special attention will be given to insurance practices and their relation to the whole insurance problem among commercial fishing vessels.

An ordinary risk carrier runs a business concern to make a profit. Two major objectives dominate his efforts: on the one hand, he strives to increase the revenue he receives by selling promises to indemnify the insured vessel under the provisions and limitations of the insurance contract and, on the other hand, to keep to a minimum the costs of running his business, including payment of claims. Although subject to numerous qualifications, the above framework largely determines the nature of the relation between insurer and insured.

How efficiently have the insurers operated in their efforts to maximize their profits or minimize their losses? In what ways may the insurance practices have contributed to the insurance problem? In order to answer these questions, the following topics will be discussed: first, the efficiency of insurers in estimating the expectation of loss; second, the effect of the law of averages and competition on the revenue of insurers; finally, factors affecting expenses and losses of insurers. Discussion of these topics may not fully answer the above broad questions, but it will serve the purpose at hand, namely, discovering and understanding the importance of the basic sources of the insurance problem.

A. RATING AND COST OF HULL AND PROTECTION AND INDEMNITY INSURANCE

Other things disregarded, the degree of success or failure of an insurer depends largely on estimating as accurately as possible the value of the risk, i.e., the expectation of loss which is the product of the amount of insurance at stake and the probability of loss. In fact, the expectation of loss determines the insurance rate and the assumed obligations toward the insured in underwriting the risk. The higher the expectation of loss, the higher the insurance rate or the smaller the coverage. Conversely, the lower the expectation of loss, the lower the rate or the higher the coverage. If this relationship is true, the cost of insuring a good risk should be less than the cost

TABLE 27. - HULL INSURANCE RATES
BY AGE, GROSS TONNAGE, AND LOSS EXPERIENCE OF VESSEL

Geographical area	Average insurance rate by age of vessel at 1956[a]					Vessels studied
(1)	10 years old or younger	11 to 20 years old	21 to 30 years old	31 years old or older	All vessels	
I. New England	5.1	5.5	7.0	8.7	6.1	(127)
II. Gulf Area	5.2	5.8	7.2	7.8	5.6	(78)
III. California	6.5	7.5	8.8	10.3	7.4	(96)

	Average insurance rate by gross tonnage of vessel[a]				
(2)	40 gross tons or smaller	41 to 85 gross tons	86 gross tons or larger	All vessels	
I. New England	6.9	6.7	4.6	6.1	(127)
II. Gulf Area	6.0	5.4	3.8	5.6	(78)
III. California	7.3	8.7	7.1	7.4	(96)

	Comparison of average insurance rate, age, and gross tonnage of vessels classified by loss experience[a]															
(3)	Active wood vessels with best loss record				Active wood vessels with worst loss record				Active steel vessels				Lost wood vessels			
	Rate	Age	Tons	Vessels	Rate	Age	Tons	Vessels	Rate	Age	Tons	Vessels	Rate	Age	Tons	Vessels
I. New England	6.7	18	46	(52)	5.8	16	81	(53)	2.8	18	226	(11)	7.1	32	50	(11)
II. Gulf Area	5.2	13	37	(32)	5.9	11	37	(33)	4.0	7	98	(9)	6.8	12	50	(4)
III. California	7.4	14	126	(42)	9.7	14	145	(42)	4.1	8	396	(3)	8.4	21	115	(8)

[a] All insurance rate averages represent arithmetic means.

Source: Tables A-35 and A-131 in Appendix A. No basic table for distribution (3) is is available.

of insuring a poor risk. The validity of this proposition is tested first, by an examination of the criteria upon which hull insurance risks are rated and second, by a comparison of the insurance cost between vessels with best and vessels with worst loss record.

1. Rating of vessels for hull insurance. According to information obtained from maritime insurers, the criteria upon which the expectation of loss from a commercial fishing vessel is estimated are the age, gross tonnage, port of operation of the vessel, the safety equipment on board, the type of fishing in which the vessel is engaged, the quality of officer personnel and crew, the financial indebtedness and credit standing of the insured owner, and the past loss experience of the vessel and its owner. Although emphasis on each criterion may differ from port to port and from insurer to insurer, the above list may be considered as including all major factors in estimating the expectation of loss. However, the ultimate evaluation of these criteria in determining the physical and moral hazard involved rests on the underwriter's judgment, which is of paramount importance in this type of risk.

The insurance rate may be considered as an index which measures the expectation of loss. A rate of 5 percent means that the expected loss (including all costs) is likely to average no more than five dollars per one hundred dollars of insurance at stake. Hence, a rate lower than the above would mean lower expectation of loss and a higher rate would mean a higher expectation of loss. Classification of vessels by age groups indicates that there is a direct relationship between insurance rates and age of vessels in all three areas (table 27). This means that, other criteria being of equal importance, the expectation of loss increases with the age of the vessel. For instance, during 1950-54 a New England vessel owner was paying, on the average, $51 in premium per $1,000 of insurance for a vessel 10 years old or younger and $87 for the same amount of insurance for a vessel 31 years old or older. Insurers seem to have relied considerably on the vessel's age in estimating the expectation of loss.

While age of vessel may represent the probability of loss at least as far as the physical hazard is concerned, gross tonnage principally represents the amount of insurance at stake. Assuming equal probability of loss, the higher the amount of insurance at stake, the larger the amount to be charged as premium, in spite of a lower insurance rate. For example, a vessel with only $50,000 insurance and a rate as high as 7.0 percent will yield a $3,500 premium while a vessel with $100,000 insurance and a rate as low as 5.0 will yield a $5,000 premium. Thus, although a larger vessel represents a larger amount of insurance at stake, there is an inverse relation between rate and gross tonnage in all three areas (table 27). For instance, during 1950-54 a New England owner paid, on the average, $69 in premium per $1,000 of insurance for a vessel of 40 gross tons or smaller, and $46 per $1,000 of insurance for a vessel of 86 gross tons or larger. But this inverse relationship is noticeably lower than the previous age-rate association, particularly in California where vessels of 41-85 gross tons averaged higher (8.7 percent) than vessels of 40 gross tons or smaller (7.3 percent). The inverse relationship means that, other criteria being of equal importance, the expectation of loss decreases with an increase in gross tonnage.

2. Undue emphasis on age and tonnage in rating vessels for hull insurance? Insurers reported that in addition to age and gross tonnage of a vessel, other criteria already mentioned were used in estimating the expectation of loss. Discussions in previous chapters have shown that, in general, the moral hazard (the term is defined here broadly enough to include the human element in contrast to physical hazard which refers to the physical characteristics of the vessel and the nature of fishing operations) was relatively more important than the physical hazard. A very important question may be raised here. Is it likely that insurers unduly emphasized age and gross tonnage in estimating the exectation of loss? Vessel owners frequently express doubt about the rating efficiency of insurers. One New England owner contended that "Insurers should rate family-owned and operated boats in a special class, i.e., rate according to merit." Another owner from California pointed out that "the insurance rate should not be based on age of vessel alone. The way boat was built should be considered as well as the record of the boat." The subject deserves further consideration.

Testing the rating efficiency of insurers presents almost insurmountable difficulties. The owner's character, his financial position, and quality of officer personnel and crew are very important in estimating the probability of loss, but these are also nonquantifiable variables. The problem is solved, however, by using loss experience as an index with which vessels can be rated. Loss experience not only represents the ultimate realization of the estimates on the expectation of loss, but it also expresses both quantitative and qualitative criteria in quantified terms, i.e., in dollars and cents. Furthermore, the reliability of loss experience for testing the rating efficiency of insurers cannot be effectively questioned on grounds that it is an index after the fact. On the contrary, if insurers collectively estimated expectation of loss fairly accurately, the only reliable criterion would be the one which measures the realization of expectations.

The previously explained (Chapter V) rating of vessels whose hull insurance was studied on the basis of their loss record is used again here. The average rate, age, and gross tonnage of the four classes of vessels--active wood vessels with best loss record, active wood vessels with worst loss record, active steel vessels, and lost wood vessels--appear in table 27.

These measurements indicate that insurers collectively emphasized age and gross tonnage because these characteristics reflected fairly accurately the quality of the insurable risk. The inverse relationship between gross tonnage and rate assumes that the probability of loss decreases as the size of the vessel increases. Otherwise, the insurance rate should remain constant to reflect the same proportion of insurance amount at stake (reflected in gross tonnage). Similarly, the direct relation between age and rate assumes that the probability of loss increases with the age of the vessel. The efficiency of insurers can be measured by the extent to which loss experience verifies these assumptions. It will be noted that the New England wood vessels which were lost were, on the average, much older (32 years old) than and almost as small (50 gross tons) as the best wood vessels in the area (18 years old and 46 gross tons--table 27). Perhaps the fact that the New England worst active wood vessels were younger (16 years old) and larger (81 gross tons) than the best vessels may partly explain their lower insurance rate. On the other hand, in the Gulf Area and California, where no substantial differences in age and gross tonnage existed between best and worst active wood vessels, the average insurance rate of worst vessels was higher than the rate of best vessels. Also, the fact that in California no substantial differences in gross tonnage existed between lost wood vessels (115 gross tons) and best or worst active wood vessels (126 and 145 gross tons, respectively) may account for the low association between insurance rate and gross tonnage in that area.

Although the above findings may indicate that insurers as a group were fairly efficient in rating their insurable risks, they are not conclusive enough to test the insurer's efficiency in estimating the expectation of loss. It has already been explained that the insurance rate does not accurately measure the insurance cost. The other major provisions of the insurance contract must be taken into consideration and the effect of competition on risk differentiation must be analyzed (see section B, subheading 2 this chapter).

TABLE 28. - DIFFERENCES IN THE COST OF HULL INSURANCE BETWEEN VESSELS CLASSIFIED ON THE BASIS OF LOSS EXPERIENCE AS INDICATED BY THE MOST IMPORTANT AND FREQUENT PROVISIONS OF THE INSURANCE CONTRACT

Geographical area - contractual provision	Percentage of or average amount in policies having indicated contractual provision				
	Best wood	Worst wood	Steel vessels	Lost wood	All vessels
I. New England					
1. Net premium ratio (dollars per 100 dollars insurance)	5.6	5.0	2.6	5.7	4.4
2. Including latent defects (Inchmaree clause)	88%	97%	98%	90%	93%
3. Including franchise clause	46%	61%	74%	48%	56%
4. Including deductible average	52%	60%	16%	58%	52%
5. Franchise amount on all claims except collision (dollars per policy)	$500	$523	$1,128	$500	$617
6. Deductible amount on all claims except collision (dollars per policy)	$292	$353	$ 250	$893	$371
7. Exclusions on loss of equipment	76%	80%	74%	74%	77%
Number of policies in the sample (100%)	(171)	(215)	(49)	(31)	(466)
II. Gulf Area					
1. Net premium ratio (dollars per 100 dollars insurance)	6.1	5.4	3.8	6.4	5.1
2. Including latent defects (Inchmaree clause)	60%	56%	49%	0.0%	54%
3. Including franchise clause	-	-	-	-	-
4. Including deductible average	90%	99%	100%	(8)	96%
5. Franchise amount (dollars per policy)	-	-	-	-	-
6. Deductible amount on all claims of whatsoever nature (dollars per policy)	$444	$409	$424	$233	$420
7. Exclusions on loss of equipment	71%	89%	51%	(6) [a]	76%
Number of policies in the sample (100%)	(82)	(102)	(35)	(8)	(227)
III. California					
1. Net premium ratio (dollars per 100 dollars insurance)	6.2	6.1	3.7	6.9	5.9
2. Including latent defects (Inchmaree clause)	96%	96%	(8) [a]	(24) [a]	95%
3. Including franchise clause	56%	77%	(13) [a]	(18) [a]	69%
4. Including deductible average	71%	59%	00%	(11) [a]	61%
5. Franchise amount (dollars per policy)	$2,026	$2,213	$3,000	$3,420	$2,295
6. Deductible amount on all claims of whatsoever nature (dollars per policy)	$ 345	$ 276	00	$2,567 [b]	$ 316
7. Exclusions on loss of equipment	91%	100%	(13) [a]	(24) [a]	96%
Number of policies in the sample (100%)	(140)	(157)	(13)	(24)	(334)

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[a] Base too small for percentaging; actual frequencies in parentheses.

[b] Deductible amount applies to all claims except collision.

Source: Tables A-54, A-55, A-56, A-57, and A-59. No basic tables for items 2 and 7, but detailed breakdowns on the same items may be found in tables A-53 and A-5
All tables are in Appendix A.

3. Rating and hull insurance cost. Whether insurers operate efficiently or not can be better tested by a comparison of insurance cost for vessels rated on the basis of their loss record. On the average, insurance cost of vessels with the best loss record should be lower than the insurance cost of vessels with worst loss record, since loss experience represented the realization of the previously estimated expectation of loss.

The cost of insurance during 1950-54 in terms of premium ratio and coverage for the four classes of vessels--best active wood, worst active wood, active steel, and lost wood--is shown in table 28. A number of observations can be made which may help to find out whether and to what extent insurers collectively were efficient in estimating accurately the expectation of loss on hull insurance.

First, it is evident that insurers in most cases differentiated between the four classes of vessels in terms of coverage, i.e., all other contractual provisions shown in table 28 except the premium ratio. For instance, in New England the proportion of insurance contracts on best active wood vessels with a franchise clause (46 percent) or with a deductible average clause (52 percent) or with provisions which excluded loss of equipment (76 percent) was lower than the proportion of insurance contracts on worst active wood vessels with the same provisions (61 percent, 60 percent and 80 percent, respectively). Also, best vessels had an average franchise amount of $500 and a deductible of $292, both of which were lower than the corresponding amounts of $523 and $353 on worst vessels. Although the proportion of contracts on best vessels with full coverage under the Inchmaree clause (88 percent) was lower than the proportion on worst vessels (97 percent), as shown in table 28, a proportionately larger number of clauses on worst vessels excluded negligence on machinery (table A-53 Appendix A). All these provisions indicate that, as a group, best active wood vessels in New England enjoyed a relatively greater coverage than worst active wood vessels. It is also seen that the coverage of active steel vessels, on the average, is greater than the coverage of best active wood vessels, while the coverage of lost wood vessels is as limited as that of worst active wood vessels in many respects and with a considerably larger deductible on all claims except collision ($893 compared to $353 on worst loss wood vessels). Similar observations indicate that insurers differentiated between the four classes of vessels even more so in the Gulf Area and California than in New England.

Second, the cost of insurance in terms of the premium ratio, (gross or net premium--insurance amount ratio) is higher on best active wood vessels than on worst active wood vessels. For instance, a New England owner of a vessel with best loss record paid, on the average, $56 in net premium per $1,000 of insurance, while an owner of a vessel with worst loss record paid only $50 per $1,000 of insurance. (Gross premium ratios are higher than the net premium ratios quoted here, but the relationship is the same--cf. table

A-59 in Appendix A). The effect of age and gross tonnage on the premium ratio can be easily seen in New England (cf. previous discussion on rating). Also, the premium ratio of best active wood vessels was higher than the ratio of worst active wood vessels in both Gulf Area and California.

Of course, the out-of-pocket premium which the owner of a vessel with worst loss record paid was higher than the premium paid by the owner of a vessel with best record. In New England the gross premium per policy for best active wood vessels was $1,612, much less than the gross premium of $2,683 per policy for worst active wood vessels (table A-59 in Appendix A). But it is questionable whether even a small part of this difference can be attributed to factors other than age and gross tonnage differences between the two vessel classes. (Worst vessels were almost twice as large as and slightly younger than best vessels--table 27.) There is evidence which substantiates this contention. In the Gulf Area, where no differences in age and gross tonnage between the two vessel classes exist, gross premium per policy was $1,091 for best vessels and only $966 for worst vessels. In California these figures are $5,017 for best and $6,459 for worst vessels which, at first glance, seems to disprove the above statement. It should not be forgotten, however, that in California worst vessels were slightly larger than best vessels--145 gross tons for the former as compared to 126 gross tons for the latter--and that risk differentiation in terms of the premium ratio was better in California than elsewhere.

In connection with the insurer's efficiency in estimating the expectation of loss, the situation may be summed up as follows: Insurers differentiated between various insurable risks as far as the coverage was concerned. It is questionable, however, whether differentiation in terms of coverage was adequate, especially among active wood vessels. In addition, the coverage differentials were largely offset by the premium ratio, especially between best and worst active vessels. Relatively speaking, insurers failed to differentiate more in terms of the premium ratio than in terms of coverage. This is highly significant from the viewpoint of the effect of insurance practices on the loss experience of insurers because the coverage determined the scope of the insurers' obligation to indemnify the insured, while the premium ratio determined the revenue from which obligations must be paid out.

4. Rating and cost in protection and indemnity insurance. The expectation of loss in protection and indemnity insurance is estimated on a considerably different basis than the one used in hull insurance. In the last analysis the expectation of loss depends largely on one single criterion--the size of the crew.

Other things being equal, the larger the crew the larger the amount at stake and the greater the probability of loss. In hull insurance the amount at stake is largely conditioned by gross tonnage as a measure of the vessel's value while age, other physical characteristics, and the human element reflect the probability of loss. Of course, the amount at stake and the probability of loss may vary irrespective of crew size, but still the variability will be reflected through this single factor. Therefore, in places where crew size is the main criterion, the expectation of loss should be estimated relatively more accurately than in hull insurance.

It will be seen in table 29 that, in terms of net premium ratio or gross premium per crewman, protection and indemnity insurance in New England was costlier for owners of vessels with worst loss record ($16 for $1,000 amount of insurance or $222 per crewman) than for owners of vessels with best loss record ($13 for $1,000 amount of insurance or $193 per crewman). But this cost differential is largely offset by a coverage which is more liberal for worst than for best vessels. Only 15 percent of contracts of worst vessels included a deductible clause on personal injury and 32 percent on property damage. For best vessels, the figures were 38 percent and 44 percent respectively. Furthermore, 61 percent of the contracts of worst vessels covered the owner on board for maintenance and cure, while only 48 percent of contracts of best vessels provided the same. Most important, deductible amounts for both personal injury and property damage were smaller among worst vessels ($195 and $180, respectively) as compared to the corresponding amounts for best vessels ($243 and $240). Therefore, there seems to be no significant difference in the cost of insurance between best and worst vessels. (For rating of vessels on the basis of their loss record, see Chapter V.)

Since no losses were reported in the Gulf Area sample, a rating dichotomy of vessels could not be obtained. It is very interesting to note, however, that during 1950-54 the cost of protection and indemnity insurance in the Gulf Area was higher than the cost of insurance of best New England vessels. Although the premium in the Gulf Area was $128 per crewman as compared to $193 per crewman of best New England vessels, a New England owner of a vessel paid $1 less per $1,000 of insurance than a Gulf Area owner. In addition, with the exception of the provision covering the owner on board for maintenance and cure, all other terms of the contract indicate greater coverage for the best New England vessels than in the Gulf Area. Of course, considering premium per crewman and absolute premium paid, the out-of-pocket cost of insurance was higher in New England than in the Gulf Area.

TABLE 29. - DIFFERENCES IN THE COST OF PROTECTION AND INDEMNITY INSURANCE BETWEEN VESSELS WITH BEST VS WORST PAID LOSS RECORD AS INDICATED BY THE MOST IMPORTANT AND FREQUENT PROVISIONS OF THE INSURANCE CONTRACT

Geographical area - contractual provision	Percentage of or average amount in policies having indicated contractual provision		
	Vessels with best loss record	Vessels with worst loss record	All vessels
I. New England			
1. Net premium ratio (dollars per 100 dollars insurance)	1.3	1.6	1.5
2. Average gross premium per crewman	$193	$222	$210
3. Deductible on personal injury	38%	15%	25%
4. Deductible on property damage	44%	32%	37%
5. Owner on board covered for maintenance, etc.	48%	61%	55%
6. Deductible amount on personal injury	$243	$195	$226
7. Deductible amount on property damage	$240	$182	$211
Number of policies in the sample (100%)	(186)	(259)	$445)
II. Gulf Area[a]			
1. Net premium ratio (dollars per 100 dollars insurance)	1.4	-	1.4
2. Average gross premium per crewman	$128	-	$128
3. Deductible on personal injury	90%	-	90%
4. Deductible on property damage	90%	-	90%
5. Owner on board covered for maintenance, etc.	5%	-	5%
6. Deductible amount on personal injury	$402	-	$402
7. Deductible amount on property damage	$402	-	$402
Number of policies in the sample (100%)	(39)	(-)	(39)
III. California			
1. Net premium ratio (dollars per 100 dollars insurance)	0.33	0.28	0.30
2. Average gross premium per crewman	(b)	(b)	(b)
3. Deductible on personal injury	100%	100%	100%
4. Deductible on property damage	100%	100%	100%
5. Owner on board covered for maintenance, etc.	9%	1%	5%
6. Deductible amount on personal injury	$730	$570	$658
7. Deductible amount on property damage	$252	$254	$253
Number of policies in the sample (100%)	(171)	(140)	(311)

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[a] No dichotomy could be obtained for the Gulf Area because there were no paid losses in the sample.

[b] Premium not computed on the basis of crew size.

Source: Tables A-81, A-83, A-84 in Appendix A.

In California, it is quite clear that the cost of insurance of vessels with worst record was lower than the cost of best vessels. The owner of a vessel with worst loss record paid $28 per $10,000 of insurance, while the owner of a vessel with best loss record paid $33 for the same amount of insurance. In addition, although coverage was equally liberal in all respects for both classes of vessels, the deductible amount of $570 on personal injuries for worst vessels indicates a greater coverage than the amount of $730 for best vessels. This serious discrepancy may be explained by the method with which the expectation of loss is determined in California. Since this method does not use crew size as a basic criterion, it is less likely to take into consideration loss experience and therefore, the probability of loss. Rather, it seems to rely heavily on the amount of insurance at stake. This in turn may partly explain the relatively more unprofitable experience of insurers in California than in New England.

Failure of insurers to differentiate between best and worst vessels is more pronounced in protection and indemnity insurance than in hull insurance, a fact indicated by the wide difference in the loss ratio between best and worst vessels. During 1950-54 the loss ratio of best vessels in New England was as low as 3.1 while no losses from best vessels were reported in California. By comparison, the loss ratio of worst vessels in New England was 111.5 and in California, 331.9 (table 18).

Were insurers as a group efficient in accurately estimating the expectation of loss on hull and protection and indemnity insurance? The answer to this question depends largely on one's viewpoint or the definition of the situation and whether insurers were efficient or not is a matter of degree rather than of complete lack of efficient rating.

From the viewpoint of operational efficiency the above findings indicate the presence of a number of imperfections in the rating process. Why did insurers fail to differentiate more than they did, especially in terms of the premium ratio which determines their revenue? This question is part of another more general one. Why was loss experience unprofitable for a majority of insurers during 1950-54?

In the course of this survey, a considerable amount of information was accumulated on insurance practices and the structure of the insurance industry. This subject, however, is a study in itself lying outside the limited scope of this report. Here, an attempt is made to answer the above questions for a clearer understanding of the insurance problem in the commercial fishing industry through presentation of a restricted amount of data and a discussion of the insurance principles and practices which adversely affected the loss experience of insurers during 1950-54.

B. THE EFFECT OF THE LAW OF AVERAGES AND COMPETITION ON THE REVENUE OF INSURERS

In the beginning of this chapter the insurer's business objectives were stated in simple terms. In order to maximize his profits or minimize his losses, his efforts are concentrated, on the one hand, to increasing his revenue from premiums and, on the other hand, to keeping his losses and expenses to a minimum. Although these two major functions of the insurer are closely interrelated, for the sake of an orderly presentation of the material, this topic includes only the factors which put limitations on the revenue which the insurers realized from charging the insured commercial fishing vessels a premium.

For the purpose at hand, the operation of the law of averages is briefly explained, its importance to the subject analyzed, and the adverse effect of competition among insurers and brokers or agents is discussed from the viewpoint of restricting the revenue of the former. This study shows that the revenue of insurers was limited in two ways: first, by the failure of insurers to differentiate adequately among risks and second, by the failure of insurers to charge higher premiums.

1. The probable effect of the law of averages on risk differentiation. The first explanation of the insurer's position in the problem is given by the limitations of the law of averages. The ideal operation of the law of probability presupposes that first, the probability of loss is identical, and second, the number of risks is large and well enough dispersed geographically to secure stability of occurrence of accidents. Under such ideal conditions, the expectation of loss is determined by the amount of insurance at stake. As the number of risks decreases and the probability of loss is not identical, the task of the underwriter becomes more difficult and his estimation of the expectation of loss less accurate.

No hazard has the above mentioned two conditions to a degree which would assure the ideal operation of the law of probability. In reality, some hazards approach the ideal conditions and others lie near the opposite extreme where the risk is nonmeasurable and the insurance contract becomes a wager.

The foregoing remarks, together with discussions in previous chapters indicate clearly that the law of averages operates on commercial fishing vessels under severe limitations. Neither was the number of commercial fishing vessels insured by each individual insurer adequate to secure stability of accident occurrence nor was the hazard on vessels homogenous. Of course, the adverse effect of limited numbers was met by most insurers through the widely practiced principle of reinsurance. But the problem of the wide heterogeneity of the risks seems to have been approached in a less satisfactory manner.

From the actuarial viewpoint, the developments which took place during 1950-54 may be partially explained in the following terms. Since the law of averages assumes homogeneity of risks, the insurer had to estimate the expectation of loss from commercial fishing vessels on the basis of an average risk. Credits were given to risks which were better than the average and debits were given to risks which were poorer than the average. But departures from this average made by differentiating among individual risks could not fluctuate beyond a fairly limited and balanced range without changing the average itself. Hence, increases in the hazard evidenced during 1950-54 resulted in a limited differentiation of the expectation of loss between risks and, by comparison, in a substantial rise in the average expectation of loss for all vessels. Most of the increase in losses came from a minority of vessel owners, but the increase in insurance cost had to be borne, to a large extent, by all insured owners. Without this averaging of the expectation of loss, insurers would have been unable to offer insurance protection to owners of commercial fishing vessels.

This principle was little understood by the majority of vessel owners who felt that insurers were unjust in failing to differentiate adequately among risks. Previous quotations from owners illustrate this point. For the record, however, a few additional remarks of owners are cited here. A New Englander contends that "better risks are thrown in with bad risks." Another one from the same area points out that "there is a need for more consideration of a particular vessel, not over-all pool rating," and he reaches the following conclusion about the situation of insurance companies: "Oligopoly, not sufficiently competitive." Statements such as the above were more frequent among owners in New England, the area which experienced the widest spread in the hazard, than elsewhere. Consequently, resistance of the insured to higher insurance cost was not a matter of cost alone but also a matter of attitude.

2. Competition among insurers and risk differentiation. Another reason for the failure of insurers to differentiate adequately is the presence of strong competition among insurers. In order to better understand the nature of this competition and subsequent discussions on the imperfections of the insurance market, it is necessary to explain briefly some aspects of the structure of the insurance industry.

Although the insurance contract is an agreement between insured and insurer, business for the latter is obtained by the insurance broker. Except in the case of an agent who is a representative of the insurer, the insurance broker is an independent businessman who represents the insured. A matter of extreme importance is that the business interests of the insurance broker and the insurer are not identical. The broker representing the interests of the insured vessel owner operates on a commission basis, irrespective of the profits or losses of the insurer with whom he places (sells) the risks. The agent's position is less independent than that of the broker in many respects, yet even the agent's earnings are largely determined on a commission basis.

Obviously, a conflict of interest may arise from this relationship between sellers and buyers of risks. Brokers are likely to be interested in the insurance premium rather than in the quality of the risk inasmuch as their immediate earnings depend on a commission. The presence of this conflict and its intensity depends on several considerations. For an insurance agency which represents the insurer whose earnings are determined partly on commissions and partly on the loss experience of the accepted risks and whose managers are members of the home staff of the insurer, the presence of this conflict and its intensity are at a minimum. In contrast, emphasis on the collected premium rather than on the quality of the risk is likely to be most intense among independent brokers with short-run outlook in business or who dote on premium volume and opportunistic policies. The chief goal of the broker is profit through commissions and there is little loyalty to the underwriter.

While, for all intents and purposes, barriers to underwriting vessels are negligible, economies of scale and better operation of the law of averages can be obtained through an increase in the volume of business. Insurers accept or refuse to underwrite risks offered by the brokers for reasons not always related to particular risks. Acceptance of a particular risk depends not infrequently on the volume of business the broker brings in and his total loss experience rather than on the quality of the risk itself. With regard to acceptance of vessels, the opinion of quite a few insurers is that underwriting commercial fishing vessels nowadays is largely "companionate" or "accommodation" business.

From the point of view of risk underwriting, the insurance market resembles a vast web of connections. The outer portion of the web is occupied by insurance brokers, and agents; insurers are located close to the center, while the center itself is occupied by reinsurers. There are no sharp lines of demarcation between the three groups, however, and overlapping of functions is not infrequent. The insurance market consists of insurers and brokers with wide differences in the volume and type of risks, or in the scope and nature of operations. They range from well established and conservative concerns which follow sound insurance practices to the fly-by-night, opportunistic or superficial concerns which, according to an underwriter, "violated every principle in the book" during the period under study. Of course, in the long run these marginal operators tend to drop from the scene. But from the market standpoint as a whole, in the long-run the ideal underwriting situation never comes since other insurers or brokers continually enter the field.

While the above-described market situation had several adverse effects on the loss experience of insurers (to be discussed later), from the viewpoint of rating, competition among insurers resulted in a failure to differentiate adequately among risks. Just as averaging (arithmetic mean) had the effect of evening out the extremes of insurance costs from both ends in the array distribution (cf. discussion in Chapter III), so did competition among insurers have a similar effect in evening out the differences in the cost of insurance among risks. Thus, a vessel which was considered a poor and unacceptable risk by a conservative insurer was an acceptable risk by another either more venturous or large-volume insurer.

Failure to differentiate adequately among risks indicates also a failure on the part of the market to respond to the changes in hazard effectively. Emphasis on age and gross tonnage of vessels, rather than other factors can be partly explained by the fact that loss experience indicated proportionately larger losses from small or aged vessels. Nevertheless, in view of the operational characteristics of the market and cost considerations, undue reliance should not be placed on age and tonnage for underwriting purposes. In fact, a case was reported from California (see quotation in following subtopic) whereby loss experience of the vessel owner was entirely disregarded and the vessels were rated in classes on the basis of age and value (which is directly related to gross tonnage) of vessel alone. In a sense, failure to differentiate among the risk measures the inability of the market to reflect the changes in hazard. In turn, this failure indicates how little loss experience is considered in rating commercial fishing vessels.

TABLE 30. - LOSS EXPERIENCE FOR HULL AND PROTECTION AND INDEMNITY INSURANCE OF AMERICAN AND ALIEN INSURERS

Geographical area - loss ratios	Hull insurance			Protection and indemnity insurance		
	American insurers	Alien insurers	All insurers	American insurers	Alien insurers	All insurers
I. New England						
1. Paid losses ÷ net premium	60.3	81.2	63.2	32.4	175.4	72.8
2. Loss & expense ÷ net premium	63.1	83.4	65.9	37.6	201.5	83.9
Number of policies in sample	(393)	(70)	(463)	(153)	(293)	(446)
II. Gulf Area						
1. Paid losses ÷ net premium	67.2	27.8	66.9	0	0	0
2. Loss & expense ÷ net premium	69.2	30.5	69.0	0	0	0
Number of policies in sample	(223)	(4)	(227)	(37)	(2)	(39)
III. California						
1. Paid losses ÷ net premium	69.4	17.2	43.3	68.3	225.7	128.1
2. Loss & expense ÷ net premium	70.9	17.8	44.1	82.2	253.4	148.8
Number of policies in sample	(205)	(133)	(338)	(185)	(126)	(311)

Source: Tables A-86 and A-94 in Appendix A.

In view of the previous discussion on the structure of the insurance industry, limited reliance on loss experience of the insurable vessel and its owner for rating purposes becomes understandable. The loss experience of individual insurers was extremely restricted because of the limited number of vessels insured from each port so that no actuarial statistics of some reliability could be compiled. High mobility of insurable risks from one to another insurer prevented observations over a period of years. Possible conflict of interests between the broker seeking a commission and the insurer seeking an acceptable risk contributed in no less amount to the same result. But this is not all. Assuming that the best channels of acquiring a risk and estimating its expectation of loss are used, no one can easily detect the future changes in the character of the insured or the crews on board.

Furthermore, whatever risk differentiation was present occurred largely in terms of coverage rather than in terms of the premium ratio. As a matter of fact, in many cases poor risks had a lower premium ratio than good risks (cf. tables 28 and 29). This development is consistent with the insurance practice followed by many insurance brokers or agents, namely, emphasizing the premium by lowering the rate and increasing the amount of insurance. For similar reasons, differentiation of risks in terms of coverage was easier since it was less discernible or less objectionable to the insured.

3. Competition and the premium. Besides narrowing risk differentials, competition among insurers had another more important effect. The premium was kept lower than might have been possible otherwise. In addition, vessels representing very poor risks were able to buy insurance which may not have been otherwise available. The above effects are shown here by a comparison of loss experience and insurance premium between American and alien insurers.

Highly significant differences occurred between the loss experience of American and alien insurers for both kinds of insurance (table 30). During 1950-54, the loss ratio for hull insurance of alien insurers was higher (83.4) than the loss ratio of American insurers (63.1) in New England but was lower elsewhere. The loss ratio of alien insurers in the Gulf Area is not reliable because of small sample size. The profitable loss experience of alien insurers for hull insurance in California may be explained by developments which took place during 1950-54 in that area. The leading American underwriters were organized in a pool which established rate classes of vessels on the basis of age and value only. The owner with a good record did not benefit because loss experience was not considered in rating a vessel. The rates were high enough to allow acceptance of poorer risks. According to the field

TABLE 31. - DIFFERENCES IN THE COST OF HULL INSURANCE BETWEEN VESSELS INSURED WITH AMERICAN AND ALIEN INSURERS AS INDICATED BY THE MOST IMPORTANT AND FREQUENT PROVISIONS OF THE INSURANCE CONTRACT

Geographical area - contractual provision	Percentage of or average amount in policies having indicated contractual provision		
	Policies written by American insurers	Policies written by Alien insurers	All polici in samp
I. New England			
1. Net premium ratio (dollars per 100 dollars insurance)	4.4	4.3	4.4
2. Including latent defects (Inchmaree clause)	94%	94%	94%
3. Including franchise clause	65%	6%	56%
4. Including deductible average	49%	73%	52%
5. Franchise amount on all claims except collision (dollars per policy)	$607	$1,167	$613
6. Deductible amount on all claims except collision (dollars per policy)	$341	$583	$368
7. Exclusions on loss of equipment	85%	36%	78%
Number of policies in the sample (100%)	(393)	(70)	(463
II. Gulf Area			
1. Net premium ratio (dollars per 100 dollars insurance)	5.1	7.5	5.1
2. Including latent defects (Inchmaree clause)	55%	0%	54%
3. Including franchise clause	-	-	-
4. Including deductible average	96%	(4) a/	96%
5. Franchise amount (dollars per policy)	-	-	-
6. Deductible amount on all claims of whatsoever nature (dollars per policy)	$426	$ 150	$420
7. Exclusions on loss of equipment	77%	0%	76%
Number of policies in the sample (100%)	(223)	(4)	(227)
III. California			
1. Net premium ratio (dollars per 100 dollars insurance)	5.9	5.8	5.9
2. Including latent defects (Inchmaree clause)	92%	96%	94%
3. Including franchise clause	75%	55%	67%
4. Including deductible average	72%	44%	61%
5. Franchise amount on all claims except collision (dollars per policy)	$2,000	$2,979	$2,306
6. Deductible amount on all claims of whatsoever nature (dollars per policy)	$ 361	$ 330	$ 341
7. Exclusions on loss of equipment	94%	98%	96%
Number of policies in the sample (100%)	(205)	(133)	(338)

a/ Base too small for percentaging; actual frequencies in parentheses

Source: Tables A-85, A-88 to A-92, Appendix A. No basic table for item 2, but detailed tables in Appendix A.

supervisor who reported this arrangement, the London underwriters "used the umbrella provided by the pool to pick out the best risks by quoting a rate 15 percent lower and skimmed off the best of the market. Dissention among underwriters led to a break-up of the fishboat committee and the market is now completely free. Each insurer sets his own rates with an eye on his competitors." The unprofitable loss ratio of American insurers in California reflects the experience of all nonalien insurers and in spite of the satisfactory experience of the Commercial Fishermen's Inter-Insurance Exchange.

The same table 30 shows that in New England, American insurers had a profitable experience from protection and indemnity insurance with a loss ratio as low as 37.6, while alien insurers did not have a profitable experience, as the 201.5 loss ratio indicates. In California both groups of insurers had an unprofitable loss experience, but losses were much more severe among alien insurers with a loss ratio as high as 258.4, than they were among American insurers who averaged a loss ratio of 82.2 during 1950-54. As has already been shown, no protection and indemnity insurance losses occurred in the small Gulf Area sample.

The effect of competition among insurers can be seen by a comparison of the above loss ratios and premium collected by the two groups. The differences in the premium for hull insurance between American and alien insurers, shown in table 31, were not as wide as differences in their loss ratios. A few observations will illustrate the point. Although alien insurers in New England had an adverse selection of risks in terms of premium ratio, they charged less than their American competitors. A New England owner paid, on the average $44 per $1,000 of insurance to American insurers and $43 to alien competitors. The unprofitable experience of alien insurers occurred because the premium they charged was not in proportion to their heavy losses. While alien insurers collected $2,129 in net premium per policy which was less than the net premium of $2,337 collected by American insurers, the former paid as much as $1,776 in losses and claim expenses per policy as compared to the latter who paid as little as $1,491 per policy (tables A-85 and 86 in Appendix A).

Competition for hull insurance risks among insurers had the reverse effect in California. It was the majority of American insurers who had an unprofitable loss experience and not the alien competitors. As has already been explained, most American insurers failed to differentiate adequately among risks by relying totally on age and value for rating vessels. Alien competitors were able to obtain a favorable selection of risks by quoting slightly lower insurance cost to relatively good risks.

TABLE 32. - DIFFERENCES IN THE COST OF PROTECTION AND INDEMNITY INSURANCE BETWEEN VESSELS INSURED WITH AMERICAN AND ALIEN INSURERS

AS INDICATED BY THE MOST IMPORTANT AND FREQUENT PROVISIONS OF THE INSURANCE CONTRACT

Geographical area - contractual provision	Percentage of or average amount in policies having indicated contractual provision		
	Policies written by American insurers	Policies written by Alien insurers	All policies in sample
I. New England			
1. Net premium ratio (dollars per 100 dollars insurance)	4.60	0.56	1.52
2. Average gross premium per crewman	$190	$220	$210
3. Deductible on personal injury	7%	33%	24%
4. Deductible on property damage	10%	50%	36%
5. Owner on board covered for maintenance, etc.	41%	64%	56%
6. Deductible amount on personal injury	$291	$216	$224
7. Deductible amount on property damage	$283	$203	$210
Number of policies in the sample (100%)	(153)	(293)	(446)
II. Gulf Area			
1. Net premium ratio (dollars per 100 dollars insurance)	1.38	1.75	1.38
2. Average gross premium per crewman	$139	$ 44	$128
3. Deductible on personal injury	87%	(2)[a]	87%
4. Deductible on property damage	87%	(2)[a]	87%
5. Owner on board covered for maintenance, etc.	5%	00%	5%
6. Deductible amount on personal injury	$425	$100	$402
7. Deductible amount on property damage	$425	$100	$402
Number of policies in the sample (100%)	(37)	(2)	(39)
II. California			
1. Net premium ratio (dollars per 100 dollars insurance)	0.24	0.55	0.30
2. Average gross premium per crewman	(b)	(b)	(b)
3. Deductible on personal injury	99%	100%	100%
4. Deductible on property damage	100%	100%	100%
5. Owner on board covered for maintenance, etc.	00%	13%	5%
6. Deductible amount on personal injury	$622	$715	$660
7. Deductible amount on property damage	$256	$248	$253
Number of policies in the sample (100%)	(185)	(126)	(311)

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[a] Base too small for percentaging; actual frequencies in parentheses.

[b] Premium not computed on the basis of crew size.

Source: Tables A-93, A-95, and A-96 in Appendix A.

The competitive pattern for protection and indemnity insurance in New England was different. Expectation of sizeable losses because of large court awards made large insurance amounts highly desirable to the owner. Alien insurers responded to the situation by drastically lowering the premium ratio. Thus, American companies charged $46 for $1,000 of insurance, while the alien competitors charged only $5.60 for the same insurance amount (table 32). In contrast to the competitive effects in hull insurance, the unprofitable experience of alien insurers occurred because of low premium rather than because of adverse selection of risks. While American insurers collected $3,601 per policy in net premium, they paid only $1,354 in losses and claim expenses per policy. By comparison, alien insurers paid as much as $1,832 in losses and claim expenses per policy but collected only $740 per policy in net premium (tables A-93 and 94 in Appendix A).

Competition for protection and indemnity insurance took a different course in California. Although the cost of insurance in terms of premium ratio was higher among alien insurers than American firms, the rate was too low for both groups. American insurers charged $2.40 for $1,000 of insurance while alien insurers charged $5.50 for the same amount. As a result of this practice, both groups collected a low net premium of $512 for American and $456 for alien insurers, and both experienced unprofitable experience. But losses by alien insurers were much greater because of adverse selection of risks on their part. Paid losses and claim expenses per policy were $1,180 for alien insurers and only $421 for American companies. Reports from the area indicated that the pool of American underwriters insisted on keeping rates down because they feared that the rest of the protection and indemnity insurance market would go to alien competitors. Some underwriters with very bad loss experience wished all risks were with the alien insurers from the beginning.

The remarks of an interviewer about a vessel owner who carried both kinds of insurance on his vessel may be considered most appropriate in describing the highly competitive state of affairs among insurers. He says, "This man has changed companies four times and gets better rates each time."

In concluding the discussion on competition, it should not be forgotten that the unprofitable experience of the majority of insurers during 1950-54 may not necessarily mean actual losses to a particular insurer. Actual losses of an insurer depended on his break-even ratio, his reserves from previous years, and the profitability of other business received in accepting the underwriting of commercial fishing vessels. Also, his ability to stay in the market or cease underwriting vessels depends on many other considerations outside the scope of this survey.

Competition among insurers on insurance coverage and its probable effect on loss experience is discussed in the next topic.

C. FACTORS AFFECTING EXPENSES AND LOSS PAYMENTS OF INSURERS

Following the discussion of the factors which affect the revenue of insurers, the next step is to observe how the collected premium is allocated. This is done by an examination of the factors which affect the cost of acquiring the risks, the coverage which determines the insurers' responsibility to indemnify the insured, and the expenses for the adjustment of claims.

The break-even ratio offers a suitable dividing line between operational costs, on the one hand, and losses and claim expenses, on the other. Here, the term operational costs is defined broadly to include, in addition to acquisition cost, all other costs except claim expenses which are directly allocated to losses. Numerous objections might be raised to this definition, since no sharp lines of demarcation can be drawn between which costs and expenses are allocated to claims and which are not. Similar objections might be raised about what costs consist of in general. However, for the purpose at hand, the term operational costs is used as a residual item consistent with the previously applied break-even ratio of insurers. Therefore, if the break-even ratio of insurers ranged from 60 to 75 percent of earned premiums, this means that for every dollar earned no less than 25 cents or no more than 40 cents went to expenses other than those which were directly allocated to losses. Contrastingly, for every dollar which the insured paid in, no more than 75 cents and no less than 60 cents were available to meet the payment of losses and claim expenses.

1. Why operational costs are high. The existence of the foregoing break-even ratios indicates that the operational costs of underwriting commercial fishing vessels were relatively higher than in many other insurance fields. A number of reasons may explain the high operation costs of insurers.

The nature of the risk required the technical knowledge of the surveyor and the adjuster. In addition, it was necessary that insurance broker and underwriter have a sound knowledge of the general characteristics of the commercial fishing industry as well as the special conditions prevailing in each port. Geographical dispersion of the risks and the presence of factors which might suddenly change the hazard required constant observation. For the same reasons, the process of handling the risk, i.e., acquiring it and adjusting claims, was time-consuming and required a large personnel. The loyalty of this personnel was of supreme importance for the profitable operation of the insurer, and the establishment of reliable channels was a costly proposition.

Compared to all these factors which contributed to high operational costs, the revenue which the insurers received per policy was proportionately small. An example will illustrate this point. The time which is required to handle a risk yielding a $3,000 premium may be almost the same as the time required to handle another risk twice the value of the first and yielding twice that premium. Assuming that all operational costs were measured in direct relation to the time required to handle the two risks and amounted to $1,200 in each case, operational costs for the small vessel represented 40 percent of premium, while for the large vessel they represent 20 percent of the premium. Thus, the inverse relationship between insurance rate and gross tonnage (representing roughly the value of the vessel) was not due to the difference in the probability of loss alone but also the economies in operational costs obtainable from larger vessels. For the same reason, lower rates to fleet owners cannot be explained in terms of quality of the risk alone. Therefore, operational costs represent a relatively large proportion of the premium dollar because the value of the average risk was relatively small when compared to such risks as cargo and passenger vessels.

Furthermore, operational costs may also have been high because of excess capacity in the form of possible duplication in the services available for handling the risks. Competition is not identical with efficiency. The insured may have benefited from a highly competitive insurance market in terms of lower premiums. At the same time, he may have paid higher operational costs because each competing insurer might be compelled to maintain his channels of handling the risks irrespective of the volume of business. Not infrequently, as many as four brokers or agents were involved between the insured and the insurer. This was particularly true in the placement of risks for protection and indemnity insurance. Although the adjustment of claims may not involve all these middlemen, it required the services of most of them, plus the services of the adjusters, lawyers, doctors, and other specialists, depending on the case. Duplication in services does not necessarily mean lack of effort on the part of the insurer to minimize his cost but rather in spite of it or because of it since the loyalty of the middleman or lack of such loyalty may very well spell the difference between profits and disaster.

In addition to the above structural factors, the unprofitable experience of insurers during 1950-54 may have contributed to higher operational costs. It became necessary to survey or inspect the insured vessel more frequently. Mobility of the risks increased. Doubtful claims multiplied. Litigation became more frequent and the number of middlemen and their services may have multiplied. Although some of the expenses which occurred from the above or similar developments were allocated to particular claims, part of them may have boosted the operational costs of the insurers.

2. Factors preventing adequate restriction on coverage. Competition among underwriters seems to have contributed to losses by preventing adequate restriction of the coverage in spite of the insurers' serious efforts to differentiate among risks.

While alien insurers lowered the hull insurance premium ratio in New England, (table 31) they failed to restrict the coverage commensurably. It is true that in New England the proportion of policies including a deductible clause, the franchise amount, and the deductible amount were higher on policies written by alien insurers than they were on policies written by American insurers. But the proportion of policies with the all-important Inchmaree clause was as high among policies of alien insurers (94 percent) as among policies of American insurers (94 percent). In addition, the proportion of policies of alien insurers with exclusions on loss of equipment was only 36 percent, less than half of the 85 percent of American competitors.

As will be noted in table 31, in California alien insurers not only offered a lower premium ratio than the American competitors but a substantially greater average as well. As many as 96 percent of policies written by alien insurers included the Inchmaree clause, while 92 percent of policies written by American insurers included the same provision. Only 55 percent of the policies of the alien insurers included a franchise clause and 44 percent a deductible clause, while these percentages were 75 percent and 72 percent, respectively, of policies written by American companies. Although the franchise amount on alien insurers' policies was $2,979 as compared to $2,000 on policies written by American insurers, the deductible amount was less ($330) in the former group than in the latter ($360). With regard to exclusions on loss of equipment, both groups included high percentages of policies with such a provision (94 percent for American and 98 percent for alien insurers).

In addition to a drastic reduction of the premium ratio for protection and indemnity insurance, alien insurers in New England offered a coverage greater than that offered by their American competitors (table 32). In return for the higher premium, $220 per crewman as compared to $190 charged by American firms, the deductible amounts on personal injury and property damage were lower than the amounts on policies written by American insurers. Lower deductible amounts were partially offset by the fact that clauses on personal injury and property damage was higher on policies written by alien insurers than on policies written by American insurers. But alien insurers had a larger percentage of policies covering the owner on board than the percentage of policies written by American competitors. Because of the special competitive state of affairs in California, coverage differentials between the policies of the two competing groups were not too significant.

In spite of the above effects of competition, many insurers as a group made serious efforts to restrict the key provisions of the contract which largely determined the magnitude of their losses. In New England the full coverage of the important Inchmaree clause was restricted. During the policy year 1950-51 as much as 71.8 percent of the policies studied provided for full coverage under the clause. In 1954-55 only 26.4 percent of the policies included the same provision (table A-28, New England in Appendix A). At the same time, in 1953 and thereafter, all franchise and deductible amounts rose substantially. In the Gulf Area and California only the franchise and the deductible amounts increased, while the coverage under the Inchmaree clause increased in the former area and remained the same in the latter (table A-28, Gulf Area and California in Appendix A).

Similarly, the key coverage provisions for protection and indemnity insurance were restricted considerably. In New England the proportion of policies providing for a deductible on personal injuries increased from about 25 percent in 1950-51 to 70.3 percent in 1954-55, but the deductible average was slightly reduced (table A-32, New England in Appendix A). While all policies in California provided for a deductible on personal injuries throughout the period, there was a slight increase of the deductible amount.

Whether the above restriction of the key coverage provisions were adequate is largely a matter of viewpoint and objective. Since the purpose of this report is to analyze the insurance problem after the fact and in the light of the largely unprofitable loss experience of insurers in order to draw conclusions useful to all concerned, the adequacy of these restrictions may be questioned.

Neither the restriction of hull insurance coverage under the Inchmaree clause nor the rise in the deductible amount were adequate to cope with the rising tide in the partial losses in New England. The decline in the proportion of policies with full coverage under the Inchmaree clause was offset by a proportional increase of policies with an Inchmaree clause which excluded negligence with respect to machinery, so that during 1950-54 the percentage of policies with the Inchmaree clause in general increased from88.1 percent to 97.8 percent (table A-28, New England in Appendix A). A measure of the inadequate restriction of hull insurance coverage is given by the loss record in New England. As much as 47 percent of claims were of $500 or less, while partial losses represented as much as 61 percent of all losses (cf. discussion of tables 13 and 14 in Chapter IV). By the same measure, failure to restrict coverage under the Inchmaree clause in the Gulf Area and inadequate rise in the deductible amount may partly explain the fact that almost 50 percent of losses were $500 or less, while partial losses represented as much as 50 percent of all losses. Finally, although partial losses constituted only 29 percent of all losses in California, the frequency and severity of losses because of mechanical failure (56 percent) justified some restriction of the full coverage under the Inchmaree clause in all policies in that area.

TABLE 33. - EXTENT OF OVERINSURANCE AS INDICATED BY A COMPARISON OF THE AMOUNT OF INSURANCE AND MARKET VALUE OF VESSELS WITH DIFFERENT LOSS EXPERIENCE OF HULL INSURANCE

Geographical area (1)	Insurance amount of each vessel: (averages in thousand dollars)									Vessels reporting
	Smaller than market value			Equal to market value			Larger than market value			
	Insurance amount	Market value	Ratio	Insurance amount	Market value	Ratio	Insurance amount	Market value	Ratio	
I New England	$ 46.6	$ 56.5	83	$52.5	$52.5	100	$ 45.2	$32.0	141	(44-13-44)
II Gulf Area	22.0	33.0	67	18.6	18.6	100	24.5	20.2	121	(40-3-16)
III California	129.4	166.7	78	23.3	23.3	100	115.2	80.1	138	(55-3-16)

(2)	Vessels with amount of insurance larger than market value classified on the basis of loss experience															
	Best active wood vessels			Worst active wood vessels			Active steel vessels			Lost wood vessels			All vessels in sample			
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	
I New England	25	16	152	61	47	129	175	120	146	29	16	182	45	32	141	(22-16-2-4)
II Gulf Area	24	20	121	19	14	132	43	39	110	0	0	0	25	20	121	(8-6-2-0)
III California	86	61	141	144	97	148	307	220	110	55	21	268	115	80	144	(27-25-1-2)

Columns designated (1) represent insurance amount in thousand dollars per vessel; (2) market value in thousands of dollars per vessel; and (3) amount of insured as per cent of market value. All figures rounded.

Source: Tables A-63 and A-64 in Appendix A.

Similar observations with regard to inadequate restriction of protection and indemnity insurance coverage may be made for New England. All policies did not provide for a deductible on personal injury; in those cases where deductible clauses were included, amounts provided for were small. This relatively liberal coverage may partly explain the fact that as much as 48 percent of claims in New England were $100 or less, while they represented no more than 2.7 percent of all protection and indemnity losses (cf. discussion of table 16 in Chapter IV). By comparison, the effect of a large deductible in California can be seen by the fact that claims of less than $101 constituted only 10.6 percent of all losses. The reduction in the amount of losses which New England insurers could have realized by increasing their deductible from an average of $226 to an average as high as that in California ($658) and including a deductible clause in all policies, would have been approximately 11 percent of all losses.

In conclusion, if insurers had been able to restrict more than they did the key coverage provisions of the insurance contract,namely, the Inchmaree clause and the deductible amount for hull insurance; and the deductible clause and amount on personal injury for protection and indemnity insurance, their losses might have been substantially smaller. Many of them might even have made a profit. But the realities of the market are different, and the past can only help better anticipation of the future.

3. The importance of overinsurance on hull. Insuring a vessel for more than its current market value was a practice which may have contributed to hull insurance losses more than any other single provision of the insurance contract.

Available evidence, shown in table 33, indicates that overinsurance in 1950-54 was widely practiced in New England and, to a lesser extent, in the Gulf Area and California. If vessels whose owners reported an insurance amount equal to market value are combined and considered similarly as the overinsured vessels, as much as 57 percent of the reporting New England vessels were overinsured, while the percentage was 32 percent in the Gulf Area, and 26 percent in California. In view of the fact that quite a few vessel owners declined to disclose the estimated market value of their vessel and that they were well aware of the importance of overinsurance, the above percentages might have been higher than the data disclosed. It will be seen also in table 33 that overinsurance was practiced on all types of vessels irrespective of the quality of the risk. It may be highly significant that vessel owners who lost their vessels were less responsive in stating the estimated value of their vessel than were owners of active vessels, but all those who responded quoted a market value smaller than the amount of insurance they collected.

Since overinsurance indicates a serious disregard of sound insurance principles, further analysis of the situation is necessary. In the first place, the argument may be advanced that the responding vessel owner underestimated the market value of his vessel. This argument may carry some weight, but it is doubtful that such is the case. While replacement value of vessels probably was rising, the pessimistic business outlook was a depressing factor on market values. In addition knowing that the probable presence of moral hazard existed to a high degree, whether the owner underestimated the market value or not may be of little consequencial importance.

Second, overinsurance may result automatically through the capitalization process. Once a vessel is built its market value is largely, if not exclusively, determined by its earnings rather than by its replacement cost. When earnings go down, the market value of the vessel declines and *vice versa*. For example, let us assume that a vessel cost $50,000 to build. Hull insurance on the vessel is for $40,000 representing 80 percent of its construction cost. For a number of years the earnings (not including managerial salaries or other implicit costs) of this investment are quite satisfactory, averaging $3,000 per year. Assuming a 5 percent rate of return, the market value of this vessel can be estimated at $60,000, and the insurance amount is about 76 percent of that value. If earnings drop to $1,500 per year, the market value of the vessel for the same rate of return can be estimated at $30,000, and the vessel will be overinsured for $10,000 unless the insurance amount is adjusted accordingly.

Third, a frequently employed method with which insurance brokers attempted to increase the revenue of insurers or compete in the market was by increasing the value of the policy. This increased the premium, while the premium rate remained the same or, very frequently, even declined. The arrangement was desirable to the vessel owner himself or at least minimized his resistance to the higher out-of-pocket cost for insurance. In addition, poor depreciation practices and lack of knowledge of sound business practices made many an owner compare the insurance amount with the rising replacement cost and resent any reduction in the value of the policy. Hence, under the combined effect of the broker's practices and the desires of the insured the amount of insurance kept rising at the time that falling earnings pulled the market value of the vessels down (cf. tables A-27 for New England and Gulf Area, and table A-65 in Appendix A).

Finally, a special inquiry into overinsurance made after the field work ended disclosed that during 1950-54 insurers who kept the insurance amount at 80 percent of market value or used dual valuation, i.e., one value for estimating the premium and a lower value for indemnifying the insurer in case of total loss, or employed some other similar method could be counted on the fingers of one hand. A few insurers stated that in 1955 or later, steps were being taken to cope with the problem of overinsurance. However, it seems that internal controls between insurers and their brokers or agents were less than perfect. The following New England incident experienced by a local broker is a case in point. A vessel was refused $15,000 insurance in the local office and was accepted for $30,000 in the central offices of the same company.

In view of the fact that the hull insurance contract is a value and not an indemnity contract, the probable consequences of overinsurance are not difficult to guess. Comments of owners offer some evidence of the importance of overinsurance as a probable factor contributing to total losses. A New England owner remarked: "Vessels should be insured according to their valuation. We have to pay for the boats that are lost. An owner sinks his boat and collects for it. Then the rates go up for the rest of the owners. A boat's valuation decreases every year. Therefore, it should be insured for its valuation and the rates adjusted accordingly." An owner from the Gulf Area was less explicit: "They are insuring the boats for more than they are worth." Finally, a Californian remarked pointedly: "With the high values placed on boats as compared to market value, there is little incentive to save boats that had an accident."

4. Surveying, settlement of claims, and losses of insurers. A number of imperfections in surveying vessels and in adjusting claims for hull insurance are worth mentioning since they have contributed to the losses and claim expenses of insurers.

There is evidence that a few vessels were insured without being previously surveyed. On the basis of the owner's response, 7 percent of the insured vessels in New England, 18 percent in the Gulf Area, and 1 percent in California were not surveyed for hull insurance. These percentages for protection and indemnity insurance were 10 percent, 19 percent, and 8 percent, respectively (table A-19 in Appendix A). The practice of not paying the surveyor unless the vessel is accepted by the insurer is equally important to, or perhaps more dangerous than, failing to survey the vessel. Reportedly, the no-surveying practice was widely used in the Gulf Area during 1950-54. This is the way a field supervisor described the probable dangerous consequences of this practice: "Interviewed surveyors feel that pressure is great to give a favorable survey if the insurance company pays only for the vessels they insure. When the vessel is not accepted, the possibility of collecting from the owner is not good. Hence, surveyors under such a system try to get the vessel accepted." No further comments need be made in pointing out the importance of the surveyor to the efficiency of insurers in their risk selection and in accurately estimating the expectation of loss.

Whether a claim is covered by the provisions of the insurance contract or not is largely a matter of the circumstances as reported by the captain, the crew, or the vessel owner, on the one hand, and of the surveyor's or adjustor's and broker's judgment, on the other hand. Therefore, the insurer's loss record partially depends on the loyalty of these insurance representatives. Sometimes they can benefit the insurer and sometimes they can ruin him. An underwriter from California who sustained heavy losses remarked: "Competition has been keen and the chief goal of the agent is profit-making through commissions. There is little loyalty to the underwriter on the part of the agent." There is no doubt that a great deal of the insurer's interests hinge on the loyalty of his field representatives for both kinds of insurance, but especially for hull insurance.

Adjustment of hull insurance claims is a process which frequently brings to a clash the opposing interests of the insurer and the insured. Comments from owners and interviewers alike testify to the importance of the broker and the surveyor in settling claims. Here is an illustrative case from New England as an interviewer reports it: "The vessel owner has no use for insurance companies and brokers. Lost a mast and dragging gear. Agent told him it was covered. He bought a mast and he was told that he was not covered. Owner was very incensed at both broker and company...I talked with insurance company people. The surveyor claims that the mast was rotted, and the shipyard padded the bill." Resistance against the owner's pressure and vigilance over inflated shipyard bills were not always present or strong enough to protect the insurer's interest effectively. One New England owner commented: "Rates are too high because of exorbitant charges made by all the boatyards and phony claims"; and a vessel owner from the Gulf suggested: "The insurance agent should inspect the work done by shipping yards as they inflate the bills when they know that the boat carries insurance."

The difference between amount claimed and the amount paid for hull insurance claims offers a measure of the attempt made by insurance people to curtail the insurer's losses. In New England about 85 percent of the claimed amounts were actually paid, in the Gulf Area 91 percent, and in California 90 percent. Claim expenses were relatively small, ranging between 5.3 percent and 3.7 percent, which may indicate that some expenses related to the settlement of claims may be allocated to operational costs (table A-108 in Appendix A). Also, disputes over claims may partly explain the rather lengthy waiting period required for their settlement. For American insurers the average waiting period was 4 months in New England, 2.5 months in the Gulf Area, and 6.3 months in California; for alien insurers, wherever available, the period was lengthier--4.7 months in New England and less--5.3 months in California (table A-109 in Appendix A).

The forces which contributed to larger protection and indemnity insurance losses and claim expenses were adequately explained in the last topic of the previous chapter. Some additional evidence is presented here for the sake of consistency and adequate coverage of the subject. The situation on protection and indemnity insurance claims was stated by a New England owner as follows: "All injuries are treated as a big issue by all concerned--doctors, lawyers, injured. They take advantage of the situation because it is an insurance case. Owners should resist claims most vigorously." Although the vessel owner may sometimes encourage his crew to claim benefits for personal injuries, it is the lawyer, doctor, and union official who seems to be frequently behind the injured person's demands which are not infrequently exorbitant. Another New England owner recommended that "interference and ambulance chasing by M.D.'s, lawyers, and union agents should be stopped." A third owner from the same area estimated that "probably fifty percent of the claims are not legitimate--may be collusion even with union officers and lawyer."

The other side of the story was revealed by interviews with union leaders and lawyers representing the claimant fishermen in New England. Their basic argument is well expressed by a leading lawyer in the field: "If the insurance companies would settle at my figures, they could save money." A union leader put the blame on lawyers of insurance companies who refuse to meet the "reasonable demands of the fishermen so they go to the lawyers." Although the above mentioned lawyer cited a few litigated cases where the amount awarded by the court was larger than the figure which the plaintiff's lawyer asked, the data of this survey tell a different story. In New England only 47 percent of the claimed amounts were actually paid and in California only 23 percent (table A-125 in Appendix A).

The general concensus of a number of owners from a New England port was that "Insurance company lawyers come into agreement with private lawyers and they encourage claims." This, they argued, was understandable "because the lawyers of the two parties were paid with commissions per dollar volume of business." The data of this survey disclosed that the lawyer's fee represented 18.8 percent in New England and 14.4 percent in California of paid losses for claims requiring the services of the insurance company's lawyers (table A-125 in Appendix A). According to reliable sources of information, the usual reward of lawyers representing claimant fishermen was about one-third but sometimes ran as high as 50 percent of the collected amount.

Cases involving litigation are not frequent, but they represent a very large amount of all paid losses by the insurer. In New England only about 9 percent of the claims during 1950-54 required litigation, but they represented 68 percent of all paid losses. In California these percentages were 26 percent and 76 percent, respectively (table A-123 in Appendix A). Claim expenses were higher than for hull insurance claims mainly because of legal fees. In New England claim expenses were 16 percent and in California 17 percent of paid losses (table A-124 in Appendix A). Litigation may partly explain why the settlement of protection and indemnity insurance claims required a longer time than in the case of hull insurance claims. For American insurers the average waiting period was 5.9 months in New England and 9.9 months in California; and for alien insurers 5.6 months in New England and 11.6 months in California (table A-128 in Appendix A).

D. SUMMARY AND CONCLUSIONS

Insurance rating, competition among insurers, and some insurance practices have contributed to the insurance problem, on the one hand by limiting the revenue of insurers, and on the other hand by increasing the claim expenses and incidence of claims among insurers.

1. Whether insurers operate efficiently in accurately estimating the expectation of loss was tested by a comparison of insurance cost of vessels rated on the basis of their loss record. Insurers differentiated between various insurable risks as far as the coverage was concerned. However, whether differentiation in terms of coverage was adequate, especially among active wood vessels, is questionable. Additionally, coverage differentials were largely offset by the premium ratio, especially between best and worst active vessels. Relatively speaking, insurers differentiated more in terms of coverage which determined the scope of the insurers' obligation to indemnify the insured and less in terms of the premium ratio which determined the revenue from which obligations must be paid. Finally, failure of insurers to differentiate between best and worst vessels is more pronounced in protection and indemnity insurance than in hull insurance.

2. The failure of insurers to differentiate among risks adequately is partly due to the severe limitations under which the law of averages operates in the underwriting of commercial fishing vessels. Since the law of averages assumes homogeneity of risks, increases in the hazard during 1950-54 resulted in a limited differentiation of the expectation of loss between risks and, by comparison, in a substantial rise in the average expectation of loss.

3. The highly competitive state of affairs among insurers is another factor which prevented greater risk differentiation and kept the premium lower than might have been possible otherwise.

4. On the other hand, other factors contributed to high cost and losses for the insurers. The nature of the risk requiring specialized knowledge in handling it, the geographical dispersion of the risk, and the presence of physical and human elements which may suddenly change the hazard, the relative small value of the risk compared to the time-consuming process in handling it, and possible duplication in insurance services contribute to high operational costs. Besides the above structural factors, operational costs may have increased because of frequency and severity of claims during 1950-54.

5. In spite of serious effort, competition among insurers prevented adequate restriction of the coverage, namely, the Inchmaree clause and the deductible amount for hull insurance, the deductible clause and amount on personal injury for protection and indemnity insurance. The above conclusion, however, is reached in retrospect and in view of the realities in the market.

6. During 1950-54, overinsurance was widely practiced in New England and, to a lesser extent, in the Gulf Area and California. Overinsurance is the combined effect of falling earnings which automatically lower the value of a vessel through the capitalization process, the pressure of the insured vessel owner, the broker's policies, and lack of internal controls between insurer and his representatives. In any case, overinsurance constitutes a serious disregard of sound and basic insurance principles. Available evidence emphasizes the importance of overinsurance as a probable factor which contributed to total losses.

7. Also, some imperfections in surveying vessels for both kinds of insurance, especially hull insurance, may have contributed to the insurer's losses. Evidence shows that a few vessels in all areas are not surveyed before they are insured. In the Gulf Area many surveyors are pressed to make favorable surveys since insurers have the practice of paying for their services only if the vessel is accepted.

8. Adjustment of hull insurance claims is a process which frequently brings to a clash the opposing interests of the insurer and the insured. It was found that resistance of the surveyor and the insurance broker against the owner's pressure and their vigilance over inflated shipyard bills are not always present or strong enough to protect the insurer's interest effectively.

9. The frequently unreasonable demands of injured seamen, encouraged by lawyers, doctors, and union officials with or without litigation may have contributed to higher losses and claim expenses for the insurers.

GLOSSARY OF TECHNICAL TERMS

Dual valuation. This clause of the insurance contract provides for one value of the vessel with respect to the total loss and another, higher value, with respect to all other losses covered by the policy.

Deductible clause. Under this clause the policyholder is entitled to recover the amount of the loss which is in excess of the sum specified in the deductible clause. For example, if the clause provides for a $500 deductible and a claim represents a loss of $1,000, the insured receives only $500.

Franchise clause. The difference between this clause and the deductible clause is that in franchise, the insured recovers the entire amount of loss without deductions if that amount exceeds the deduction specified in the clause.

Hull insurance. This kind of insurance protects the vessel owner against economic loss which may arise from damages to the hull, machinery, and equipment of the insured vessel under conditions, clauses, and limitations provided by the insurance contract.

Inchmaree or negligence clause. Full coverage under this clause indemnifies the insured vessel owner for break downs of motor, generators, or other electrical machines and electrical connections caused by negligence of the master, charterers, mariners, engineers, or pilots but not caused by defects in the parts of the engine.

Insurance amount. For hull insurance the amount is a single fixed amount as stated in the policy. For protection and indemnity insurance the insurance amount is usually on per crewman basis.

Oligopoly. A condition of a few sellers or in this context a few insurance companies operating in the market.

Policy year. The term refers to the period, usually twelve months, during which the contract is in effect for one commercial fishing vessel. The period may begin any day during a calendar year. The concept is highly important because it represents a unit on the basis of which the loss experience of insurers may be determined. The net premium collected under a policy year equals the earned premium and all the losses paid for claims which were incurred during the policy year represent the loss ratio of the insurer for one insured commercial fishing vessel.

Premium rate and premium ratio. The former is computed by dividing the amount of insurance into the premium of a policy of one vessel; the latter by dividing the sum of insurance amounts into the sum of premiums of a number of policies of a group of vessels.

Protection and indemnity insurance. Protection afforded under this kind of insurance includes liabilities of the vessel owner arising from damages caused to other property (except collision with other vessels) by the operation of the insured vessel, liability arising from personal injuries, illness, or death of captain and crew, and unusual expenses to comply with Government regulations, fines and penalties, arising because of violation of law under conditions, clauses, and limitations provided by the insurance contract.

Reinsurance. Part of the burden of risk of an original insurer being accepted by another insurer upon payment of a consideration therefor.

Sue and labor clause. Authorizes the insured vessel owner or his agent to defray expenses which he had in his attempt to protect the property and save it from further damage after loss has occurred and care for it as much as a prudent uninsured owner would exercise in regard to his property.

APPENDIX A

BASIC TABLES

Appendix A includes all the basic tables on the analysis of data obtained by interviewing the vessel owners and studying the insurance records of the sampled commercial fishing vessels. Percentage figures were omitted for some items in various tables. This was done when the number of vessels or the number of items in the particular category referred to were too small. Sampling error is relatively large for such items and they cannot be used as reliable estimates. The number of items in the category is shown only for reference purposes. This practice was departed from in a few tables where listing percentages for items small in number enhanced the use of the table. Insurance rates and coverage indexes are quoted in dollars per hundred dollars of insurance. The tables are grouped under the following major topics:

Topic	Table number
Insured vs. noninsured vessels	A-1 - A-26
Monetary and nonmonetary terms of the hull and protection and indemnity insurance contracts	A-27 - A-33
Active wood vessels with best lost record, active wood vessels with worst loss record, active steel vessels, and lost wood vessels which were studied for hull insurance experience	A-34 - A-60
Loss ratios for hull and protection and indemnity insurance, valuation of vessels insured for hull and comparison of revenue from fish and shellfish landings and losses	A-61 - A-65
Vessels with best loss record vs. vessels with worst loss record which were studied for protection and indemnity insurance	A-66 - A-84
Monetary and nonmonetary terms of insurance contracts written by American insurers vs. alien insurers:	
(a) Hull insurance	A-85 - A-92
(b) Protection and indemnity insurance	A-93 - A-96

BASIC TABLES - Continued

Topic	Table number
Hull insurance accidents ------------------------	A-97 - A-111
Protection and indemnity insurance accidents ----	A-112 - A-128
Miscellaneous ----------------------------------	A-129 - A-131

TABLE A-1, NEW ENGLAND
PROPORTION AND NUMBER OF INSURED AND NONINSURED ACTIVE VESSELS, 1950-54[a]

KIND OF INSURANCE INSURED-NONINSURED VESSELS	1950		1951		1952		1953		1954		Annual Average 1950-54 b/	
	Per-cent	No.	Per-cent	No.	Per-cent	No.	Per-cent	No.	Per-cent	No.	Per-cent	No.
HULL INSURANCE												
1. Insured	71.3	(164)	72.2	(169)	72.7	(176)	70.8	(172)	63.9	(145)	70.2	(165)
2. Noninsured	28.7	(66)	27.8	(65)	27.3	(66)	29.2	(71)	36.1	(82)	29.8	(70)
Total Reporting	100.0	(230)	100.0	(234)	100.0	(242)	100.0	(243)	100.0	(227)	100.0	(235)
Inactive (new and lost vessels)		(16)		(12)		(8)		(6)		(19)		(12)
Don't know		(5)		(5)		(1)		(2)		(5)		(4)
Total Sample		(251)		(251)		(251)		(251)		(251)		(251)
P & I INSURANCE												
1. Insured	68.7	(158)	69.7	(163)	70.2	(170)	67.6	(165)	64.8	(147)	68.2	(161)
2. Noninsured	31.3	(72)	30.3	(71)	29.8	(72)	32.4	(79)	35.2	(80)	31.8	(75)
Total Reporting	100.0	(230)	100.0	(234)	100.0	(242)	100.0	(244)	100.0	(227)	100.0	(236)
Inactive (new and lost vessels)		(16)		(12)		(8)		(6)		(19)		(12)
Don't know		(5)		(5)		(1)		(1)		(5)		(3)
Total Sample		(251)		(251)		(251)		(251)		(251)		(251)

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a/ During this period a cumulative total of 193 vessels, or 76.9 per cent of the sample (251), were covered by hull insurance for one or more years. More than 90% of those vessels were also covered by P & I insurance.

b/ In order to find the approximate number of vessels in New England which have carried or have not carried insurance, multiply indicated percentage by 801, the active vessel population at end of 1954.

TABLE A-1, GULF AREA
PROPORTION AND NUMBER OF INSURED AND NONINSURED ACTIVE VESSELS, 1950-54[a]

KIND OF INSURANCE INSURED-NONINSURED VESSELS	1950 Per-cent	1950 No.	1951 Per-cent	1951 No.	1952 Per-cent	1952 No.	1953 Per-cent	1953 No.	1954 Per-cent	1954 No.	Annual Average 1950-54 b/ Per-cent	Annual Average 1950-54 b/ No.
HULL INSURANCE												
1. Insured	41.5	(76)	43.8	(84)	43.2	(86)	43.7	(90)	42.4	(89)	42.9	(85)
2. Noninsured	58.5	(107)	56.2	(108)	56.8	(113)	56.3	(116)	57.6	(121)	57.1	(113)
Total Reporting	100.0	(183)	100.0	(192)	100.0	(199)	100.0	(206)	100.0	(210)	100.0	(198
Inactive (new and lost vessels)		(39)		(30)		(25)		(18)		(14)		(25)
Don't know		(3)		(3)		(1)		(1)		(1)		(2)
Total Sample		(225)		(225)		(225)		(225)		(225)		(225)
P & I INSURANCE												
1. Insured	8.3	(15)	10.0	(19)	11.7	(23)	15.3	(31)	15.7	(33)	12.2	(24)
2. Noninsured	91.7	(166)	90.0	(170)	88.3	(174)	84.7	(172)	84.3	(177)	87.8	(172)
Total Reporting	100.0	(181)	100.0	(189)	100.0	(197)	100.0	(203)	100.0	(210)	100.0	(196)
Inactive (new and lost vessels)		(39)		(30)		(25)		(18)		(14)		(25)
Don't know		(5)		(6)		(3)		(4)		(1)		(4)
Total Sample		(225)		(225)		(225)		(225)		(225)		(225)

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a/ During this period a cumulative total of 104 vessels, or 46.2 percent of the sample (225), were covered by hull insurance for one or more years. More than 90% of those vessels were also covered by P & I insurance.

b/ In order to find the approximate number of vessels in the Gulf Area which have carried or have not carried insurance, multiply indicated percentage by 2038, the active vessel pupulation at the end of 1954.

TABLE A-1, CALIFORNIA
PROPORTION AND NUMBER OF INSURED AND NONINSURED ACTIVE VESSELS, 1950-54 a/

KIND OF INSURANCE INSURED-NONINSURED VESSELS	1950		1951		1952		1953		1954		Annual Average 1950-54 b/	
	Per-cent	No.	Per-cent	No.	Per-cent	No.	Per-cent	No.	Per-cent	No.	Per-cent	No.
HULL INSURANCE												
1. Insured	51.7	(135)	51.5	(135)	50.0	(131)	49.2	(127)	47.3	(123)	50.0	(130)
2. Noninsured	48.3	(126)	48.5	(127)	50.0	(131)	50.8	(131)	52.7	(137)	50.0	(130)
Total Reporting	100.0	(261)	100.0	(262)	100.0	(262)	100.0	(258)	100.0	(260)	100.0	(260)
Inactive (New and lost vessels)		(27)		(26)		(26)		(30)		(28)		(270)
Total Sample		(288)		(288)		(288)		(288)		(288)		(288)
P & I INSURANCE												
1. Insured	46.4	(121	47.0	(123)	47.4	(125)	48.1	(124)	47.0	(122)	47.2	(123)
2. Noninsured	53.6	(140)	53.0	(139)	52.3	(137)	51.9	(134)	53.0	(138)	52.8	(138)
Total Reporting	100.0	(261)	100.0	(262)	100.0	(262)	100.0	(258)	100.0	(260)	100.0	(261)
Inactive (new and lost vessels)		(27)		(26)		(26)		(30)		(28)		(27)
Total Sample		(288)		(288)		(288)		(288)		(288)		(288)

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a/ During this period a cumulative total of 177 vessels, or 61.5 percent of the sample (288), were covered by hull insurance for one or more years. More than 90% of those vessels were also covered by P & I insurance.

b/ In order to find the approximate number of vessels in California which have carried or have not carried insurance, multiply indicated percentage by 1354, the active vessel population at the end of 1954.

TABLE A-2, NEW ENGLAND

HULL CHARACTERISTICS AND SIZE OF CREW OF INSURED AND NON-INSURED VESSELS 1950-1954

Characteristic (Average = arithmetic mean)	Insured Vessels	Non-insured vessels	All sampled vessels
1. Age (in years)	19.8	26.4	21.3
2. Gross tonnage	68.1	20.7	57.2
3. Net tonnage	38.5	12.9	32.5
4. Registered length (in feet)	67.8	44.7	62.5
5. Horsepower of main engine	198.3	93.5	174.1
6. Registered size of crew (number of men)	7.9 [a]	3.8 [a]	6.9 [a]
7. Reported size of crew (number of men)	7.5 [b]	3.9 [b]	6.8 [b]
Number of vessels reporting	(193)	(58)	(251)

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[a] Total reporting includes 232 vessels; 178 insured and 54 non-insured.

[b] Total reporting includes 158 vessels; 127 insured and 31 non-insured.

TABLE A-2, GULF AREA

HULL CHARACTERISTICS AND SIZE OF CREW OF INSURED AND NON-INSURED VESSELS 1950-54

haracteristic Average: Arithmetic mean)	Insured Vessels [a]	Non-Insured Vessels	All Sampled Vessels
. Age (in years)	11.2	16.3	13.9
2. Gross tonnage	42.4	23.8	28.0
3. Net tonnage	24.1	14.7	19.1
4. Registered length (in feet)	51.8	45.8	48.6
5. Horsepower of main engine	151.5	119.4	134.7
6. Registered size of crew (number of men)	3.1[b]	2.9 [b]	3.0[b]
7. Reported size of crew (number of men)	2.9[c]	2.7[c]	2.8[c]
Number of vessels reporting	(104)	(121)	(225)

---

[a] Vessels carrying hull insurance only had the following characteristics: 1) 12.0; 2) 38.5; 3) 22.3; 4) 49.4; 5) 136.7; 6) 3.0; 7) 2.8; respectively; and vessels carrying hull and P & I insurance were younger and larger than the previous category in all respects: 1) 9.6; 2) 49.7; 3) 27.7; 4) 56.4; 5) 179.6; 6) 3.2; 7) 3.0.

[b] Total reporting includes 218 vessels; 102 insured and 116 noninsured.

[c] Total reporting includes 162 vessels; 77 insured and 85 noninsured.

TABLE A-2, CALIFORNIA

HULL CHARACTERISTICS AND SIZE OF CREW OF INSURED AND NON-INSURED VESSELS 1950-54

Characteristics (Average: Arithmetic mean)	Insured Vessels	Non-Insured Vessels	All Sampled Vessels
1. Age (in years)	14.5	17.7	15.7
2. Gross tonnage	110.6	14.1	73.4
3. Net tonnage	38.7	7.7	26.7
4. Registered length (in feet)	66.5	37.6	55.3
5. Horsepower of main engine	284.4	124.7	222.8
6. Registered size of crew (number of men)	8.4[a]	2.7[a]	6.1[a]
7. Reported size of crew (number of men)	8.9 [b]	2.6[b]	6.8[b]
Number of vessels reporting	(177)	(111)	(288)

[a] Total reporting includes 276 vessels; 168 insured and 108 noninsured.

[b] Total reporting includes 174 vessels; 115 insured and 59 noninsured.

TABLE A-3

RIG OF INSURED AND NON-INSURED VESSELS, 1950-54

Area-Description of rig	Insured Percent	Insured No. vessels	Non-insured Percent	Non-insured No. vessels	Total reporting Percent	Total reporting No. vessels
I. New England						
1. Oil screw	83.6	(189)	16.4	(37)	100.0	(226)
2. Gas screw	-	(4)	-	(21)	-	(25)
Total reporting	76.9	(193)	23.1	(58)	100.0	(251)
II. Gulf Area						
1. Oil screw	50.0	(99)	50.0	(98)	100.0	(197)
2. Gas screw	-	(4)	-	(23)	-	(27)
Total reporting	46.0	(103)	54.0	(121)	100.0	(224)
III. California						
1. Oil screw	70.8	(170)	29.2	(70)	100.0	(240)
2. Gas screw	15.2	(7)	84.8	(39)	100.0	(46)
Total reporting	61.9	(177)	38.1	(109) [a]	100.0	(286)

[a] Total less than the sample of 111 vessels because one with coal screw and one don't know.

TABLE A-4

MATERIAL OF HULL OF INSURED AND NON-INSURED VESSELS, 1950-54

Area - Wood or Steel	Insured		Non-insured		Total reporting	
	Percent	No. vessels	Percent	No. vessels	Percent	No. vessels
I. New England						
1. Wood	75.6	(180)	24.4	(58)	100.0	(238)
2. Steel	-	(13)	-	(0)	100.0	(13)
Total reporting	76.9	(193)	23.1	(58)	100.0	(251)
II. Gulf Area						
1. Wood	43.7	(93)	56.3	(120)	100.0	(213)
2. Steel	-	(11)	-	(1)	-	(12)
Total reporting	46.2	(104)	53.8	(121)	100.0	(225)
III. California						
1. Wood	60.5	(167)	39.5	(109)	100.0	(276)
2. Steel	-	(10)	-	(2)	100.0	(12)
Total reporting	61.5	(177)	38.5	(111)	100.0	(288)

TABLE A-5

ACTIVE AND LOST
INSURED AND NON-INSURED VESSELS, 1950-54

Area - Active or lost vessel	Insured		Non-insured		Total reporting	
	Percent	Vessels	Percent	Vessels	Percent	Vessels
I. New England						
1. Active	75.1	(169)	24.9	(56)	100.0	(225)
2. Lost	-	(24)	-	(2)	-	(26)
Total reporting	76.9	(193)	23.1	(58)	100.0	(251)
II. Gulf Area						
1. Active	45.4	(94)	54.6	(113)	100.0	(207)
2. Lost	-	(10)	-	(8)	-	(18)
Total reporting	46.2	(104)	53.8	(121)	100.0	(225)
III. California						
1. Active	60.5	(156)	39.5	(102)	100.0	(258)
2. Lost	70.0	(21)	30.0	(9)	100.0	(30)
Total reporting	61.5	(177)	38.5	(111)	100.0	(288)

TABLE A-6

OWNER'S OCCUPATION OF INSURED AND NONINSURED VESSELS

AREA- OWNER'S MAJOR OCCUPATION	INSURED		NONINSURED		TOTAL REPORTED	
	Per-cent	No. Vessels	Per-cent	No. Vessels	Per-cent	No. Vessels
I. New England						
1. Captain--owner	67.8	(99)	32.2	(47)	100.0	(146)
2. Fish dealer or processor	-	(13)	-	(-)	-	(13)
3. Absentee owner	88.9	(80)	11.1	(10)	100.0	(90)
Total Reporting[a]	77.1	(192)	22.9	(57)	100.0	(249)
II. Gulf Area						
1. Captain--owner	49.3	(35)	50.7	(36)	100.0	(71)
2. Fish dealer or processor	38.3	(41)	61.7	(66)	100.0	(107)
3. Absentee owner	59.6	(28)	40.4	(19)	100.0	(47)
Total Reporting	46.2	(104)	53.8	(121)	100.0	(225)
III. California						
1. Captain--owner	51.5	(104)	48.5	(98)	100.0	(202)
2. Fish dealer or processor	-	(7)	-	(2)	-	(9)
3. Absentee owner	85.7	(66)	14.3	(11)	100.0	(77)
Total Reporting	61.5	(177)	38.5	(111)	100.0	(288)

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a/ Total reporting less than total in sample because two vessels could not be classified.

TABLE A-7

OWNER'S OCCUPATIONAL ACTIVITY OTHER THAN BEING OR IN ADDITION TO BEING CAPTAIN-OWNER, FISH DEALER OR PROCESSOR. BY INSURED AND NONINSURED VESSELS

AREA- OWNER'S ADDITIONAL OCCUPATIONAL ACTIVITY	INSURED Per-cent	INSURED No. Vessels	NONINSURED Per-cent	NONINSURED No. Vessels	TOTAL REPORTED Per-cent	TOTAL REPORTED No. Vessels
I. New England						
1. Owner with other activity	79.7	(47)	20.3	(12)	100.0	(59)
2. Owner with no other activity	76.1	(143)	23.9	(45)	100.0	(188)
Total Reporting a/	77.0	(190)	23.0	(57)	100.0	(247)
II. Gulf Area						
1. Owner with other activity	44.0	(22)	56.0	(28)	100.0	(50)
2. Owner with no other activity	46.6	(81)	53.4	(93)	100.0	(174)
Total Reporting a/	46.0	(103)	54.0	(121)	100.0	(224)
III. California						
1. Owner with other activity	57.1	(64)	42.9	(48)	100.0	(112)
2. Owner with no other activity	64.6	(113)	35.4	(62)	100.0	(175)
Total Reporting a/	61.7	(177)	38.3	(110)	100.0	(287)

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a/ Total reporting less than total in sample because a few reporters failed to answer this question.

TABLE A-8

CAPTAIN'S OWNERSHIP INTEREST IN INSURED AND NONINSURED VESSELS

AREA- CAPTAIN'S INTEREST IN VESSEL	INSURED		NONINSURED		TOTAL REPORTED	
	Per-cent	No. Vessels	Per-cent	No. Vessels	Per-cent	No. Vessels
I. New England						
1. Sole owner	65.7	(65)	34.3	(34)	100.0	(99)
2. Partner or stockholder	78.7	(70)	21.3	(19)	100.0	(89)
3. No interest	92.1	(58)	7.9	(5)	100.0	(63)
Total Reporting	76.9	(193)	23.1	(58)	100.0	(251)
II. Gulf Area						
1. Sole owner	43.3	(45)	56.7	(59)	100.0	(104)
2. Partner or stockholder	-	(17)	-	(8)	-	(25)
3. No interest	43.8	(42)	56.2	(54)	100.0	(96)
Total Reporting	46.2	(104)	53.8	(121)	100.0	(225)
III. California						
1. Sole owner	35.7	(46)	64.3	(83)	100.0	(129)
2. Partner or stockholder	81.9	(113)	18.1	(25)	100.0	(138)
3. No interest	-	(18)	-	(3)	-	(21)
Total Reporting	61.5	(177)	38.5	(111)	100.0	(288)

TABLE A-9

NUMBER OF VESSELS INTERVIEWED OWNER OWNS BY INSURED AND NONINSURED VESSELS

AREA— NUMBER OF VESSELS OWNED BESIDES THE ONE BEING INTERVIEWED	INSURED		NONINSURED		TOTAL REPORTED	
	Per-cent	No. Vessels	Per-cent	No. Vessels	Per-cent	No. Vessels
I. New England						
1. None	70.4	(119)	29.6	(50)	100.0	(169)
2. One or more	90.2	(74)	9.8	(8)	100.0	(82)
Total Reporting	76.9	(193)	23.1	(58)	100.0	(251)
II. Gulf Area						
1. None	49.0	(47)	51.0	(49)	100.0	(96)
2. One or more	44.2	(57)	55.8	(72)	100.0	(129)
Total Reporting	46.2	(104)	53.8	(121)	100.0	(225)
III. California						
1. None	54.1	(113)	45.9	(96)	100.0	(209)
2. One or more	81.0	(64)	19.0	(15)	100.0	(79)
Total Reporting	61.5	(177)	38.5	(111)	100.0	(288)

TABLE A-10

FAMILY TIES BETWEEN VESSEL OWNER AND CREW OF INSURED AND NONINSURED VESSELS

AREA- HALF OR MORE OF THE CREW RELATED OR NOT TO OWNER	INSURED		NONINSURED		TOTAL REPORTED[a]	
	Per-cent	No. Vessels	Per-cent	No. Vessels	Per-cent	No. Vessels
I. New England						
1. Owner related to crew	60.3	(41)	39.7	(27)	100.0	(68)
2. Owner not related to crew	81.2	(121)	18.8	(28)	100.0	(149)
Total Reporting	74.7	(162)	25.3	(55)	100.0	(217)
II. Gulf Area						
1. Owner related to crew	49.0	(23)	51.0	(24)	100.0	(47)
2. Owner not related to crew	45.3	(67)	54.7	(81)	100.0	(148)
Total Reporting	46.2	(90)	53.8	(105)	100.0	(195)
III. California						
1. Owner related to crew	44.9	(31)	55.1	(38)	100.0	(69)
2. Owner not related to crew	65.8	(123)	34.2	(64)	100.0	(187)
Total Reporting	60.2	(154)	39.8	(102)	100.0	(256)

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a/ Total reporting is less than the total sample because new, lost vessels and don't knows were excluded.

TABLE A-11

NATIONAL ORIGIN OF OFFICER PERSONNEL OF INSURED AND NONINSURED VESSELS [a]

Area — Major categories of national origin of officer personnel	Insured		Noninsured		Total Reported	
	Per-Cent	No. Vessels	Per-Cent	No. Vessels	Per-Cent	No. Vessels
I. New England						
1. "Italian"	68.3	(43)	31.7	(20)	100.0	(63)
2. "Portuguese"	84.4	(38)	15.6	(7)	100.0	(45)
3. "Canadian"	90.3	(28)	9.7	(3)	100.0	(31)
4. "Scandinavian"	-	(26)	-	(1)	-	(27)
Total Reporting	76.7	(181)	23.3	(55)	100.0	(236)
II. Gulf Area						
1. "American-French" "French" "Italian"	54.4	(43)	45.6	(36)	100.0	(79)
2. "American"	24.4	(11)	75.6	(34)	100.0	(45)
3. "Anglo-Saxon" "Dutch"	-	(20)	-	(6)	-	(26)
Total Reporting	45.3	(92)	54.7	(111)	100.0	(203)
III. California						
1. "Italian"	62.0	(44)	38.0	(27)	100.0	(71)
2. "American"	59.7	(40)	40.3	(27)	100.0	(67)
3. "Yugoslav"	94.6	(35)	5.4	(2)	100.0	(37)
4. "Portuguese"	-	(24)	-	(5)	-	(29)
5. "Anglo-Saxon"	-	(6)	-	(12)	-	(18)
Total Reporting	61.8	(173)	38.2	(107)	100.0	(280)

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[a] The table represents major categories of national origin with the largest number of respondents. Other nationalities or races mentioned include the following: New England: "native-born Americans or Americans," "English," "French," "Irish," "Polish and mixed." Gulf Area: "Yugoslav," "Scandinavian," "Negro," "Mexican," "Canadian," "Portuguese," "Polish," "American Indian," "Phillipino," and mixed. California: "Scandinavian," "Chinese-Japanese," "Finn," "Mexican," "Newfoundlander," and mixed.

TABLE A-12, NEW ENGLAND
REPORTED TYPE OF COMMUNICATION OR NAVIGATION APPARATUS ON BOARD INSURED AND NONINSURED VESSELS

Type of apparatus Reported on board the vessel	Insured		Noninsured		Total Reported	
	Per-cent	No. Vessels	Per-cent	No. Vessels	Per-cent	No. Vessels
1. Radio--telephone	96.4	(186)	67.2	(39)	89.6	(225)
2. Radio--transmitter	32.6	(63)	22.4	(13)	30.3	(76)
3. Radar	20.2	(39)	-	(0)	15.5	(39)
4. Radio direction finder	72.0	(139)	22.4	(13)	60.6	(152)
5. Fathometer or depth finder	94.8	(183)	60.3	(35)	86.9	(218)
6. Loran	70.4	(136)	10.3	(6)	56.6	(142)
Total in sample	100.0	(193)	100.0	(58)	100.0	(251)

TABLE A-12, GULF AREA
REPORTED TYPE OF COMMUNICATION OR NAVIGATION APPARATUS ON BOARD INSURED AND NONINSURED VESSELS

Type of apparatus reported on board the vessel	Insured		Noninsured		Total Reported	
	Per-cent	No. Vessels	Per-cent	No. Vessels	Per-cent	No. Vessels
1. Radio-telephone	84.6	(88)	65.3	(79)	74.2	(167)
2. Radio-transmitter	34.6	(36)	16.5	(20)	24.9	(56)
3. Radio direction finder	25.0	(26)	9.9	(12)	16.9	(38)
4. Fathometer or depth finder	75.0	(78)	52.9	(64)	63.1	(142)
Total in sample	100.0	(104)	100.0	(121)	100.0	(225)

TABLE A-12, CALIFORNIA
REPORTED TYPE OF COMMUNICATION OR NAVIGATION APPARATUS ON BOARD INSURED AND NONINSURED VESSELS

Type of apparatus reported on board the vessel	Insured		Noninsured		Total Reported	
	Per-cent	No. Vessels	Per-cent	No. Vessels	Per-cent	No. Vessels
1. Radio-telephone	97.7	(173)	80.2	(89)	91.0	(262)
2. Radio--transmitter	81.9	(145)	73.0	(81)	78.5	(226)
3. Radar	19.2	(34)	.9	(1)	12.2	(35)
4. Radio direction finder	74.0	(131)	66.7	(74)	71.2	(205)
5. Fathometer or depth finder	83.6	(148)	46.8	(52)	69.4	(200)
6. Loran	7.3	(13)	5.4	(6)	6.6	(19)
Total in sample	100.0	(177)	100.0	(111)	100.0	(288)

TABLE A-13, NEW ENGLAND
REPORTED SAFETY EQUIPMENT ON BOARD INSURED AND NONINSURED VESSELS

Number and type of safety equipment on board the vessel	Insured		Noninsured		Total Reported	
	Per-cent	No. Vessels	Per-cent	No. Vessels	Per-cent	No. Vessels
1. One or more dories or skiffs	91.2	(176)	65.5	(38)	85.3	(214)
2. One or more life rings	74.6	(144)	34.5	(20)	65.3	(164)
3. One or more fire pumps	33.7	(65)	20.7	(12)	30.7	(77)
4. One or more bilge pumps to fight fire	86.5	(167)	60.3	(35)	80.5	(202)
5. Fixed fire extinguishing system available	10.4	(20)	3.4	(2)	8.8	(22)
6. Three or more portable fire extinguishers	81.3	(157)	55.2	(32)	75.3	(189)
7. Medical chest available and well stocked	89.6	(173)	48.3	(28)	80.1	(201)
Total in sample	100.0	(193)	100.0	(58)	100.0	(251)

TABLE A-13, GULF AREA
REPORTED SAFETY EQUIPMENT ON BOARD INSURED AND NONINSURED VESSELS

Number and type of safety equipment on board the vessel	Insured		Noninsured		Total Reported	
	Per-cent	No. Vessels	Per-cent	No. Vessels	Per-cent	No. Vessels
1. One or more dories or skiffs	18.2	(19)	12.4	(15)	15.1	(34)
2. One or more life rings	26.0	(27)	13.2	(16)	19.1	(43)
3. One or more fire pumps	32.7	(34)	16.5	(20)	24.0	(54)
4. One or more bilge pumps to fight fire	85.6	(89)	72.7	(88)	78.7	(177)
5. Fixed fire extinguishing system available	8.7	(9)	1.7	(2)	4.9	(11)
6. Three or more portable fire extinguishers	84.6	(88)	71.9	(87)	77.8	(175)
7. Medical chest available and well stocked	74.0	(77)	35.5	(43)	53.3	(120)
Total in sample	100.0	(104)	100.0	(121)	100.0	(225)

TABLE A-13, CALIFORNIA
REPORTED SAFETY EQUIPMENT ON BOARD INSURED AND NONINSURED VESSELS

Number and type of safety equipment on board the vessel	Insured		Noninsured		Total Reported	
	Per-cent	No. Vessels	Per-cent	No. Vessels	Per-cent	No. Vessels
1. One or more dories or skiffs	70.1	(124)	45.9	(51)	60.8	(175)
2. One or more life rings	93.8	(166)	90.1	(100)	92.4	(266)
3. One or more fire pumps	55.9	(99)	26.1	(29)	44.4	(128)
4. One or more bilge pumps to fight fire	79.1	(140)	73.0	(81)	76.7	(221)
5. Fixed fire extinguishing system available	66.1	(117)	12.6	(14)	45.5	(131)
6. Three or more portable fire extinguishers	61.0	(108)	38.7	(43)	52.4	(151)
7. Medical chest available and well stocked	94.4	(167)	64.0	(71)	82.6	(238)
Total in sample	100.0	(177)	100.0	(111)	100.0	(288)

TABLE A-14

HAS THE VESSEL BEEN BUILT UNDER/OR CLASSIFIED UNDER THE RULES OF THE AMERICAN BUREAU OF SHIPPING OR OTHER CLASSIFICATION SOCIETY?

AREA- VESSEL CLASSIFIED OR NOT CLASSIFIED	INSURED		NONINSURED		TOTAL REPORTED	
	Per-cent	No. Vessels	Per-cent	No. Vessels	Per-cent	No. Vessels
I. New England						
1. Vessel classified	78.8	(52)	21.2	(14)	100.0	(66)
2. Vessel not classified	77.0	(97)	23.0	(29)	100.0	(126)
Total Reporting	77.6	(149)	22.4	(43)	100.0	(192)
Don't Know	74.6	(44)	25.4	(15)	100.0	(59)
Total Sample	76.9	(193)	23.1	(58)	100.0	(251)
II. Gulf Area						
1. Vessel classified	58.1	(25)	41.9	(18)	100.0	(43)
2. Vessel not classified	37.7	(46)	62.3	(76)	100.0	(122)
Total Reporting	43.0	(71)	57.0	(94)	100.0	(165)
Don't know	55.0	(33)	45.0	(27)	100.0	(60)
Total Sample	46.2	(104)	53.8	(121)	100.0	(225)
III. California						
1. Vessel classified	70.8	(85)	29.2	(35)	100.0	(120)
2. Vessel not classified	66.1	(41)	33.9	(21)	100.0	(62)
Total Reporting	69.2	(126)	30.8	(56)	100.0	(182)
Don't know	48.1	(51)	51.9	(55)	100.0	(106)
Total Sample	61.5	(177)	38.5	(111)	100.0	(288)

TABLE A-15

DOES THE CAPTAIN OF THE VESSEL HAVE A LICENSE OR A CERTIFICATE TO OPERATE A STEAM OR MOTOR VESSEL OF 200 GROSS TONS OR MORE?

AREA- CAPTAIN HAS OR HAS NOT A LICENSE	INSURED		NONINSURED		TOTAL REPORTED	
	Per-cent	No. Vessels	Per-cent	No. Vessels	Per-cent	No. Vessels
I. New England						
1. Captain has a license	-	(27)	-	(1)	-	(28)
2. Captain has no license	74.0	(162)	26.0	(57)	100.0	(219)
Total Reporting	76.5	(189)	23.5	(58)	100.0	(247)
Don't Know	-	(4)	-	-)	-	(4)
Total Sample	76.9	(193)	23.1	(58)	100.0	(251)
II. Gulf Area						
1. Captain has a license	-	(2)	-	(2)	-	(4)
2. Captain has no license	45.5	(80)	54.5	(96)	100.0	(176)
Total Reporting	45.6	(82)	54.4	(98)	100.0	(180)
Don't Know	48.9	(22)	51.1	(23)	100.0	(45)
Total Sample	46.2	(104)	53.8	(121)	100.0	(225)
III. California						
1. Captain has a license	88.2	(45)	11.8	(6)	100.0	(51)
2. Captain has no license	52.4	(97)	47.6	(88)	100.0	(185)
Total Reporting	60.2	(142)	39.8	(94)	100.0	(236)
Don't Know	67.3	(35)	32.7	(17)	100.0	(52)
Total Sample	61.5	(177)	38.5	(111)	100.0	(288)

TABLE A-16

DOES THE CHIEF ENGINEER OF THE VESSEL HAVE A LICENSE OR A CERTIFICATE TO OPERATE A STEAM OR MOTOR VESSEL OF 200 GROSS TONS OR MORE?

AREA- ENGINEER HAS OR HAS NOT A LICENSE	INSURED		NONINSURED		TOTAL REPORTED	
	Per-cent	No. Vessels	Per-cent	No. Vessels	Per-cent	No. Vessels
. New England						
1. Engineer has a license	-	(15)	-	(1)	-	(16)
2. Engineer has no license	77.4	(168)	22.6	(49)	100.0	(217)
otal Reporting	78.5	(183)	21.5	(50)	100.0	(233)
Don't know	-	(10)	-	(8)	-	(18)
otal Sample	76.9	(193)	23.1	(58)	100.0	(251)
I. Gulf Area						
1. Engineer has a license	-	(0)	-	(0)	-	(0)
2. Engineer has no license	36.0	(36)	64.0	(64)	100.0	(100)
otal Reporting	36.0	(36)	64.0	(64)	100.0	(100)
Don't know	54.4	(68)	45.6	(57)	100.0	(125)
otal Sample	46.2	(104)	53.8	(121)	100.0	(225)
II. California						
1. Engineer has a license	92.1	(35)	7.9	(3)	100.0	(38)
2. Engineer has no license	55.3	(89)	44.7	(72)	100.0	(161)
otal Reporting	62.3	(124)	37.7	(75)	100.0	(199)
Don't know	59.6	(53)	40.4	(36)	100.0	(89)
otal Sample	61.5	(177)	38.5	(111)	100.0	(288)

TABLE A-17

HOW MANY TIMES HAS THE VESSEL BEEN HAULED FOR BOTTOM INSPECTION AND MAINTENANCE REPAIRS DURING 1954?

AREA - TIMES VESSEL HAS BEEN HAULED DURING 1954	INSURED		NONINSURED		TOTAL REPORTED	
	Per-cent	No. Vessels	Per-cent	No. Vessels	Per-cent	No. Vessels
I. New England						
1. Once	54.8	(17)	45.2	(14)	100.0	(31)
2. Twice or more	79.6	(160)	20.4	(41)	100.0	(201)
Total Reporting	76.3	(177)	23.7	(55)	100.0	(232)
Lost vessels or Don't Know	-	(16)	-	(3)	-	(19)
Total Sample	76.9	(193)	23.1	(58)	100.0	(251)
II. Gulf Area						
1. Once	-	(8)	-	(1)	-	(9)
2. Twice or more	44.0	(88)	56.0	(112)	100.0	(200)
Total Reporting	45.9	(96)	54.1	(113)	100.0	(209)
Lost vessels or Don't Know	-	(8)	-	(8)	-	(16)
Total Sample	46.2	(104)	53.8	(121)	100.0	(225)
III. California						
1. Once	48.1	(25)	51.9	(27)	100.0	(52)
2. Twice or more	63.7	(123)	36.3	(70)	100.0	(193)
Total Reporting	60.4	(148)	39.6	(97)	100.0	(245)
Lost vessels or Don't Know	67.4	(29)	32.6	(14)	100.0	(43)
Total Sample	61.5	(177)	38.5	(111)	100.0	(288)

TABLE A-18

HOW MANY TIMES HAS THE VESSEL BEEN HAULED FOR BOTTOM INSPECTION AND MAINTENANCE REPAIRS DURING 1955?

AREA- TIMES VESSEL HAS BEEN HAULED DURING 1955	INSURED		NONINSURED		TOTAL REPORTED	
	Per- cent	No. Vessels	Per- cent	No. Vessels	Per- cent	No. Vessels
I. New England						
1. Once	-	(16)	-	(10)	-	(26)
2. Twice or more	78.4	(152)	21.6	(42)	100.0	(194)
Total Reporting	76.4	(168)	23.6	(52)	100.0	(220)
Lost vessels or Don't Know	80.6	(25)	19.4	(6)	100.0	(31)
Total Sample	76.9	(193)	23.1	(58)	100.0	(251)
II. Gulf Area						
1. Once	-	(3)	-	(2)	-	(5)
2. Twice or more	45.6	(93)	54.4	(111)	100.0	(204)
Total Reporting	45.9	(96)	54.1	(113)	100.0	(209)
Lost vessels or Don't Know	-	(8)	-	(8)	-	(16)
Total Sample	46.2	(104)	53.8	(121)	100.0	(225)
III. California						
1. Once	52.5	(31)	47.5	(28)	100.0	(59)
2. Twice or more	63.6	(117)	36.4	(67)	100.0	(184)
Total Reporting	60.9	(148)	39.1	(95)	100.0	(243)
Lost vessels or Don't Know	64.4	(29)	35.6	(16)	100.0	(45)
Total Sample	61.5	(177)	38.5	(111)	100.0	(288)

TABLE A-19

AT THE TIME YOU FIRST STARTED CARRYING INSURANCE ON YOUR VESSEL WAS THE VESSEL SURVEYED BY AN INSURANCE SURVEYOR?

-AREA- KIND OF INSURANCE	VESSEL WAS SURVEYED		VESSEL WAS NOT SURVEYED OR D.K.		TOTAL INSURED	
	Per-cent	No. Vessels	Per-cent	No. Vessels	Per-cent	No. Vessels
I. New England						
1. Hull Insurance	93.0	(174)	7.0	(13)	100.0	(187) a/
2. P & I Insurance	90.0	(161)	10.0	(17)	100.0	(178)
II. Gulf Area						
1. Hull Insurance	81.7	(85)	18.3	(19)	100.0	(104)
2. P & I Insurance	80.6	(29)	19.4	(7)	100.0	(36)
III. California						
1. Hull Insurance	98.7	(157)	1.3	(2)	100.0	(159) a/
2. P & I Insurance	92.5	(136)	7.5	(11)	100.0	(147)

a/ A few reporters failed to answer this question.

TABLE A-20

HOME PORT
OF INSURED AND NONINSURED VESSELS

Area- Home port	Insured		Noninsured		Total Reported	
	Per-cent	No. Vessels	Per-cent	No. Vessels	Per-cent	No. Vessels
New England						
1. Rockland, Maine	-	(4)	-	(12)	-	(16)
2. Portland, Maine	-	(8)	-	(6)	-	(14)
3. Gloucester, Massachusetts	93.5	(58)	6.5	(4)	100.0	(62)
4. Boston, Massachusetts	66.7	(34)	33.3	(17)	100.0	(51)
5. New Bedford, Massachusetts	92.3	(60)	7.7	(5)	100.0	(65)
6. Plymouth, Massachusetts	-	(14)	-	(3)	-	(17)
7. New London, Connecticut	-	(15)	-	(11)	-	(26)
Total Reporting	76.9	(193)	23.1	(58)	100.0	(251)
Gulf Area						
1. Tampa, Florida	-	(6)	-	(12)	-	(18)
2. Biloxi, Mississippi	5.6	(2)	94.4	(34)	100.0	(36)
3. New Orleans, Louisiana	22.9	(11)	77.1	(37)	100.0	(48)
4. Morgan City, Louisiana	75.6	(34)	24.4	(11)	100.0	(45)
5. Galveston, Texas	53.3	(16)	46.7	(14)	100.0	(30)
6. Corpus Christi, Texas	-	(14)	-	(12)	-	(26)
7. Brownsville, Texas	-	(21)	-	(1)	-	(22)
Total Reporting	46.2	(104)	53.8	(121)	100.0	(225)
California						
1. San Diego, California	80.5	(66)	19.5	(16)	100.0	(82)
2. Los Angeles, California	69.8	(81)	30.2	(35)	100.0	(116)
3. San Francisco, California	36.1	(26)	63.9	(46)	100.0	(72)
4. Eureka, California	-	(4)	-	(14)	-	(18)
Total Reporting	61.5	(177)	38.5	(111)	100.0	(288)

TABLE A-21

LENGTH OF FISHING PERIOD OF INSURED AND NONINSURED VESSELS

Area-Fishing period during 1950-54 (Months)	Insured Per-cent	Insured No. Vessels	Noninsured Per-cent	Noninsured No. Vessels	Total Reported Per-cent	Total Reported No. Vessels
New England						
1. One to six	-	(1)	-	(7)	-	(8)
2. Seven to ten	69.4	(43)	30.6	(19)	100.0	(62)
3. Eleven to twelve	83.5	(81)	16.5	(16)	100.0	(97)
Total Reporting[a]	74.9	(125)	25.1	(42)	100.0	(167)
Gulf Area						
1. One to six	-	(11)	-	(10)	-	(21)
2. Seven to ten	36.8	(14)	63.2	(24)	100.0	(38)
3. Eleven to twelve	39.1	(34)	60.9	(53)	100.0	(87)
Total Reporting[a]	40.4	(59)	59.6	(87)	100.0	(146)
California						
1. One to six	47.9	(35)	52.1	(38)	100.0	(73)
2. Seven to ten	58.3	(42)	41.7	(30)	100.0	(72)
2. Eleven to twelve	-	(10)	-	(8)	-	(18)
Total Reporting[a]	53.4	(87)	46.6	(76)	100.0	(163)

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[a] Total reporting less than total in sample because a number of vessels could not be classified.

TABLE A-22

MAJOR TYPES OF FISHING GEAR OF INSURED AND NONINSURED VESSELS, AVERAGE FOR 1950-55

-Area- Major types of fishing gear	Insured		Noninsured		Total Reporte	
	Per-cent	No. Vessels	Per-cent	No. Vessels	Per-cent	No. Vessels
I. New England						
1. Trawls (otter)	84.9	(135)	15.1	(24)	100.0	(159)
2. Dredges	77.4	(24)	22.6	(7)	100.0	(31)
3. Other a/	46.5	(20)	53.5	(23)	100.0	(43)
Total Reporting b/	76.8	(179)	23.2	(54)	100.0	(233)
II. Gulf Area						
1. Trawls (mostly shrimp)	46.8	(80)	53.2	(91)	100.0	(171)
2. Other c/	-	(10)	-	(15)	-	(25)
Total Reporting b/	45.9	(90)	54.1	(106)	100.0	(196)
III. California						
1. Hook and line	54.1	(86)	45.9	(73)	100.0	(159)
2. Purse seines	80.5	(33)	19.5	(8)	100.0	(41)
3. Other d/	70.0	(35)	30.0	(15)	100.0	(50)
Total Reporting b/	61.5	(154)	38.4	(96)	100.0	(250)

---

a/ Stop nets 17, traps 12, gill nets 5, purse seines 5, hook and line 4.

b/ Total reporting less than total in sample because a number of vessels could not be classified.

c/ Hook and line 12, dredges 7, purse seines 4, gill nets 2.

d/ Stop nets 24, traps (crab) 9, trawls 9, traps or pound nets 3, gill nets 5.

TABLE A-23

MAJOR FISHING GROUNDS
OF INSURED AND NONINSURED VESSELS,
AVERAGE FOR 1950-55

Area- Major fishing grounds	Insured		Noninsured		Total Reported	
	Per-cent	No. Vessels	Per-cent	No. Vessels	Per-cent	No. Vessels
. New England						
1. New England coast	77.5	(145)	22.5	(42)	100.0	(187)
2. Middle Atlantic coast	66.7	(22)	33.3	(11)	100.0	(33)
3. Canada (Grand Banks Nova Scotia)	-	(11)	-	(-)	-	(11)
otal Reporting[a]	77.1	(178)	22.9	(53)	100.0	(231)
I. Gulf Area						
1. Gulf Area (North)	42.6	(66)	57.4	(89)	100.0	(155)
2. Gulf Area (South)	65.7	(23)	34.3	(12)	100.0	(35)
otal Reporting[a]	46.8	(89)	53.2	(101)	100.0	(190)
II. California						
1. California and West Coast of Mexico	56.4	(128)	43.6	(99)	100.0	(227)
2. Central and South America	-	(25)	-	(-)	-	(25)
otal Reporting[a]	60.7	(153)	39.3	(99)	100.0	(252)

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a/ Total reporting less than total in sample because a number of vessels could not be classified.

TABLE A-24

MAJOR KINDS OF FISH CAUGHT BY INSURED AND NONINSURED VESSELS, AVERAGE FOR 1950-55

Area- Major kind of fish caught	Insured		Noninsured		Total Reported	
	Per-cent	No. Vessels	Per-cent	No. Vessels	Per-cent	No. Vessels
I. New England						
1. Cod, haddock	84.7	(50)	15.3	(9)	100.0	(59)
2. Flounders	75.0	(33)	25.0	(11)	100.0	(44)
3. Whiting	65.9	(27)	34.1	(14)	100.0	(41)
4. Scallops	-	(23)	-	(3)	-	(26)
5. Other a/	73.3	(44)	26.7	(16)	100.0	(60)
Total Reporting b/	77.0	(177)	23.0	(53)	100.0	(230)
II. Gulf Area						
1. Shrimp	47.6	(80)	52.4	(88)	100.0	(168)
2. Other c/	37.9	(11)	62.1	(18)	100.0	(29)
Total Reporting b/	46.2	(91)	53.8	(106)	100.0	(197)
III. California						
1. Tuna	77.7	(80)	22.3	(23)	100.0	(103)
2. Salmon	15.6	(7)	84.4	(38)	100.0	(45)
3. Albacore	55.0	(22)	45.0	(18)	100.0	(40)
4. Crabs	-	(5)	-	(7)	-	(12)
5. Other d/	76.5	(39)	23.5	(12)	100.0	(51)
Total Reporting	61.0	(153)	39.0	(98)	100.0	(251)

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a/Ocean perch, scup or porgy, mackerel and other.

b/Total reporting less than total in sample because a number of vessels could not be classified.

c/Oysters, red snapper, menhaden and other.

d/Mackerel, pilchard, sea bass, anchovies, halibut, flounders, cod and haddock, sea herring.

TABLE A-25

IS YOUR VESSEL MORTGAGED OR OTHERWISE BURDENED WITH ANY FINANCIAL INDEBTEDNESS?

Area- Vessel is or is not mortgaged etc.	Insured		Noninsured		Total reported	
	Per-cent	No. Vessels	Per-cent	No. Vessels	Per-cent	No. Vessels
New England						
1. Vessel is mortgaged	91.6	(76)	8.4	(7)	100.0	(83)
2. Vessel is not mortgaged	69.6	(117)	30.4	(51)	100.0	(168)
Total reporting	76.9	(193)	23.1	(58)	100.0	(251)
Gulf Area						
1. Vessel is mortgaged	71.4	(45)	28.6	(18)	100.0	(63)
2. Vessel is not mortgaged	36.4	(59)	63.6	(103)	100.0	(162)
Total reporting	46.2	(104)	53.8	(121)	100.0	(225)
California						
1. Vessel is mortgaged	83.3	(45)	16.7	(9)	100.0	(54)
2. Vessel is not mortgaged	56.4	(132)	43.6	(102)	100.0	(234)
Total reporting	61.5	(177)	38.5	(111)	100.0	(288)

TABLE A-26, NEW ENGLAND
ORIGINAL COST OF BUILDING AND EQUIPPING VESSEL OR PURCHASE PRICE, COST OF REBUILDING VESSEL, AND CURRENT MARKET VALUE OF INSURED AND NONINSURED VESSELS

Kind of vessel value a/	Insured vessels		Noninsured vessels		Value of insured as per cent of value of noninsured Columns 1 ÷ 3
	Average value in thousand dollars (1)	Number of vessels reporting (2)	Average value in thousand dollars (3)	Number of vessels reporting (4)	
1. Original cost of building and equipping vessel	$68.3	(123)	$15.2	(31)	449.3
2. Purchase price	39.6	(130)	9.5	(41)	416.8
3. Replacement value	99.9	(178)	27.8	(55)	359.4
4. Current market value	42.5	(155)	10.0	(48)	425.0

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a/ All averages represent arithmetic means computed from original arrays.

TABLE A-26, GULF AREA
ORIGINAL COST OF BUILDING AND EQUIPPING VESSEL OR PURCHASE PRICE, COST OF REBUILDING VESSEL, AND CURRENT MARKET VALUE OF INSURED AND NONINSURED VESSELS

Kind of vessel value a/	Insured vessels		Noninsured vessels		Value of noninsured
	Average value in thousand dollars (1)	Number of vessels reporting (2)	Average value in thousand dollars (3)	Number of vessels reporting (4)	As percent of value of insured vessels Columns 3 ÷ 1
1. Original cost of building and equipping vessel	$32.1	(85)	$14.7	(90)	45.9
2. Purchase Price	25.3	(75)	13.1	(49)	52.2
3. Replacement value	38.8	(101)	21.8	(106)	56.2
4. Current market value	27.2	(90)	11.7	(102)	43.0

---

a/ All averages represent arithmetic means computed from original arrays.

TABLE A-26, CALIFORNIA
ORIGINAL COST OF BUILDING AND EQUIPPING VESSEL OR PURCHASE PRICE, COST OF REBUILDING VESSEL, AND CURRENT MARKET VALUE OF INSURED AND NONINSURED VESSELS

Kind of vessel value a/	Insured vessels		Noninsured vessels		Value of insured as percent of value of noninsured Columns 1 ÷ 3
	Average value in thousand dollars (1)	Number of vessels reporting (2)	Average value in thousand dollars (3)	Number of vessels reporting (4)	
1. Original cost of building and equipping vessel	$111.5	(121)	$12.4	(55)	899.2
2. Purchase Price	66.1	(100)	9.7	(77)	681.4
3. Replacement value	151.0	(163)	21.5	(90)	702.3
4. Current market value	72.8	(140)	10.7	(93)	680.4

a/ All averages represent arithmetic means computed from original arrays.

TABLE A-27. NEW ENGLAND
AMOUNT OF INSURANCE, INSURANCE RATE, AND GROSS PREMIUM
FOR HULL INSURANCE, 1950-54

Item a/	Policy Year 1950-51	 1951-52	 1952-53	 1953-54	 1954-55
I. Amount of insurance					
1. Total average	$ 50,500	$ 52,200	$ 51,100	$ 55,300	$ 55,300
2. Lower one-third	11,300	13,000	10,000	16,400	14,600
3. Middle one-third	38,900	37,500	37,200	39,900	40,700
4. Upper one-third	102,000	105,000	106,500	109,100	111,200
II. Insurance rate					
5. Total average	5.62	5.58	5.55	6.01	6.40
6. Lower one-third	3.83	3.80	3.73	3.98	4.21
7. Middle one-third	5.41	5.25	5.34	5.55	6.33
8. Upper one-third	7.64	7.68	7.56	8.48	8.66
III. Gross premium					
9. Total average	$ 2,225	$ 2,342	$ 2,226	$ 2,650	$ 2,820
10. Lower one-third	913	874	877	1,076	1,023
11. Middle one-third	2,051	2,007	1,991	2,482	2,791
12. Upper one-third	3,718	4,135	3,818	4,386	4,648
IV. Coverage index					
13. Premium--Amount of insurance ratio (Rows 9÷1)	4.41	4.49	4.37	4.79	5.10
V. Number of policy years in sample	(86)	(93)	(101)	(99)	(89)

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a/ Items 1, 5, and 9 represent arithmetic means of amounts of all the policies in each sample; items 2-4, 6-8, and 10-12 are arithmetic means of lower, middle, and upper one-thirds of values computed from an array.

TABLE A-27, GULF AREA
AMOUNT OF INSURANCE, INSURANCE RATE, AND GROSS PREMIUM FOR HULL INSURANCE, 1950-54

Item a/	Policy Year 1950-51	 1951-52	 1952-53	 1953-54	 1954-55
I. Amount of insurance					
1. Total average	$19,500	$19,100	$20,400	$20,900	$23,000
2. Lower fifty per cent	11,100	10,300	10,700	9,700	10,800
3. Upper fifty per cent	27,700	27,800	30,000	32,000	35,200
II. Insurance rate					
4. Total average	5.41	5.65	5.66	5.39	5.30
5. Lower fifty per cent	4.37	4.57	4.60	4.20	4.25
6. Upper fifty per cent	6.45	6.74	6.74	6.57	6.35
III. Gross premium					
7. Total average	$1,008	$1,017	$1,151	$1,100	$1,218
8. Lower fifty per cent	668	637	672	585	648
9. Upper fifty per cent	1,339	1,395	1,627	1,536	1,787
IV. Coverage index					
10. Premium--Amount of insurance ratio (Rows 7:1)	5.17	5.33	5.64	5.26	5.30
V. Number of policy years in sample	(25)	(44)	(45)	(53)	(60)

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a/Items 1, 4, and 7 represent arithmetic means of amounts of all the policies in each sample; items 2-3, 5-6, and 8-9 are arithmetic means of smallest and largest values computed from an array.

TABLE A-27. CALIFORNIA
AMOUNT OF INSURANCE, INSURANCE RATE AND GROSS PREMIUM
FOR HULL INSURANCE, 1950-54

ITEM [a]	POLICY YEAR				
	1950-51	1951-52	1952-53	1953-54	1954-55[b]
I. Amount of Insurance					
1. Total average	$100,400	$110,300	$131,000	$83,500	$85,100
2. Lower fifty per cent	26,400	26,800	30,800	21,800	21,900
3. Upper fifty per cent	173,100	191,900	226,000	144,100	148,300
II. Insurance rate					
4. Total average	7.33	6.73	7.16	7.65	7.58
5. Lower fifty per cent	6.05	5.33	8.68	9.06	6.24
6. Upper fifty per cent	8.61	8.13	5.65	6.24	8.93
III. Gross premium					
7. Total average	$6,364	$6,119	$7,219[b]	$5,932[b]	$6,096[b]
8. Lower fifty per cent	2,659	1,977	2,277	1,788	1,783
9. Upper fifty per cent	10,012	10,019	12,079	10,013	10,347
IV. Coverage Index					
10. Premium---Amount of insurance ratio (Rows 7 ÷ 1)	6.34	5.55	5.51	7.10	7.16
V. Number of policy Years in sample	(61)	(65)	(73)	(71)	(68)

[a] Items 1, 4 and 7 represent arithmetic means of amounts of all the policies in each sample; items 2--3, 5-6, and 8-9 are arithmetic means of smallest and largest values computed from an array.

[b] A few extreme values were excluded.

TABLE A-28, NEW ENGLAND
INCLUSION OF LATENT DEFECTS IN HULL INSURANCE CONTRACTS, 1950-54

Item	Policy year a/ 1950-51 Percent	1950-51 No.	1951-52 Percent	1951-52 No.	1952-53 Percent	1952-53 No.	1953-54 Percent	1953-54 No.	1954-55 Percent	1954-55 No.
I. Does the policy include any latent defects? (Inchmaree clause)										
1. Yes	88.1	(74)	97.8	(88)	96.0	(95)	97.0	(96)	97.8	(87)
2. No	11.9	(10)	2.2	(2)	4.0	(4)	3.0	(3)	2.2	(2)
Total reporting	100.0	(84)	100.0	(90)	100.0	(99)	100.0	(99)	100.0	(89)
Don't Know		(2)		(3)		(2)		(-)		(-)
Total sample		(86)		(93)		(101)		(99)		(89)
II. Distribution of policies with latent defects.										
3. Full coverage	71.6	(53)	50.0	(44)	46.3	(44)	37.5	(36)	26.4	(23)
4. Excluding breakdowns of motor, generators, or other electrical machines and electrical connections	-	(-)	-	(-)	3.2	(3)	3.1	(3)	3.5	(3)
5. Excluding negligence by master, charterers, mariners, or pilots with respect to machinery.	28.4	(21)	50.0	(44)	50.5	(48)	59.4	(57)	70.1	(61)
Total reporting latent defects	100.0	(74)	100.0	(88)	100.0	(95)	100.0	(96)	100.0	(87)

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a/ Policies for excess insurance were excluded. The sample included 4, 6, 9, 8, and 3 such contracts in 1950, 1951, 1952, 1953, and 1954, respectively. With the exception of one contract in 1951 which excluded negligence with respect to machinery (item number 5), all other excess insurance contract provided for full coverage.

TABLE A-28, GULF AREA
INCLUSION OF LATENT DEFECTS IN HULL INSURANCE CONTRACTS, 1950-54

Item	Policy year a/									
	1950-51		1951-52		1952-53		1953-54		1954-55	
	Percent	No.	Percent	No.	Percent	No.	Percent	No.	Percent	No.
I. Does the policy include any latent defects? (Inchmaree clause)										
1. Yes	-	(11)	50.0	(22)	45.5	(20)	57.7	(30)	61.7	(37)
2. No	-	(14)	50.0	(22)	54.5	(24)	42.3	(22)	38.3	(23)
Total reporting	100.0	(25)	100.0	(44)	100.0	(44)	100.0	(52)	100.0	(60)
Don't Know		(-)		(-)		(-)		(-)		(-)
Total Sample		(25)		(44)		(44)		(52)		(60)
II. Distribution of policies with latent defects										
3. Full coverage	-	(11)	-	(17)	-	(16)	80.0	(24)	81.1	(30)
4. Excluding breakdowns of motor, generator, or other electrical machines and electrical connections	-	(-)	-	(1)	-	(1)	3.3	(1)	5.4	(2)
5. Excluding negligence by master, charterers, mariners, engineers or pilots with respect to machinery.	-	(-)	-	(4)	-	(3)	16.7	(5)	13.5	(5)
Total reporting latent defects	100.0	(11)	100.0	(22)	100.0	(20)	100.0	(30)	100.0	(37)

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a/ No excess insurance policies were found in the samples.

TABLE A-28, CALIFORNIA
INCLUSION OF LATENT DEFECTS IN HULL INSURANCE CONTRACTS
1950-54

Item	Policy year a/									
	1950-51		1951-52		1952-53		1953-54		1954-55	
	Percent	No.	Percent	No.	Percent	No.	Percent	No.	Percent	No.
I. Does the policy include any latent defects? (Inchmaree clause)										
1. Yes	93.7	(60)	93.8	(61)	95.8	(69)	95.8	(68)	93.9	(62)
2. No	6.3	(4)	6.2	(4)	4.2	(3)	4.2	(3)	6.1	(4)
Total reporting	100.0	(64)	100.0	(65)	100.0	(72)	100.0	(71)	100.0	(66)
Don't Know		(-)		(-)		(-)		(-)		(-)
Total sample		(64)		(65)		(72)		(71)		(66)
II. Distribution of policies with latent defects										
3. Full coverage	100.0	(60)	100.0	(61)	100.0	(69)	100.0	(68)	100.0	(62)
4. Excluding breakdowns of motor, generators, or other electrical machines & electrical connections.	-	(-)	-	(-)	-	(-)	-	(-)	-	(-)
5. Excluding negligence by master, charterers, mariners, engineers, or pilots with respect to machinery.	-	(-)	-	(-)	-	(-)	-	(-)	-	(-)
Total reporting latent defects	100.0	(60)	100.0	(61)	100.0	(69)	100.0	(68)	100.0	(62)

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a/ Policies for excess insurance were excluded. The sample included 5, 4, 4, 5, and 5 such contracts in 1950, 1951, 1952, 1953, and 1954, respectively. With the exception of one vessel, whose contract in all five years had no latent defects (item 2), all other excess insurance contracts provided for full coverage.

1950-54

Item	Policy year									
	1950-51		1951-52		1952-53		1953-54		1954-55	
	Percent or Dollars	No.	Percent or Dollars	No.	Percent or Dollars	No.	Percent or Dollars	No.	Percent or Dollars	No.
I. Is there deductible average or franchise clause?										
1. Yes	96.5	(83)	95.7	(88)	94.0	(94)	98.0	(97)	96.6	(86)
2. No	3.5	(3)	4.3	(4)	6.0	(6)	2.0	(2)	3.4	(3)
Total reporting	100.0	(86)	100.0	(92)	100.0	(100)	100.0	(99)	100.0	(89)
Don't Know		(–)		(1)		(1)		(–)		(–)
Total in sample		(86)		(93)		(101)		(99)		(89)
II. Distribution of policies with deductible average or franchise a/										
A. Franchise (frequencies)										
3. All claims (1)	1.2	(1)	1.1	(1)	1.0	(1)	1.0	(1)	-	(–)
4. Except collision(2)	62.8	(54)	58.7	(54)	61.0	(61)	47.5	(47)	41.6	(37)
5. Except sue and labor, and collision (3)	1.2	(1)	1.1	(1)	-	(–)	-	(–)	-	(–)
Total reporting	100.0	(86)	100.0	(92)	100.0	(100)	100.0	(99)	100.0	(89)
B. Franchise (average amount)										
6. Except collision (2)	$565		$593		$598		$638		$703	
C. Deductible (frequencies)										
7. All claims (1)	7.0	(6)	6.5	(6)	7.0	(7)	10.1	(10)	5.6	(7)
8. Except collisions (2)	20.9	(18)	18.5	(17)	13.0	(14)	14.1	(14)	18.0	(16)
9. Except sue and labor, and collision (3)	20.9	(18)	23.9	(22)	23.0	(23)	33.3	(33)	39.3	(35)
Total reporting	100.0	(86)	100.0	(92)	100.0	(100)	100.0	(99)	100.0	(89)
D. Deductible (average amount)										
10. All claims (1)	$250		$250		$250		$306		$333	
11. Except collision (2)	$325		$329		$269		$375		$547	
12. Except sue and labor, and collision (3)	$278		$261		$260		$278		$330	

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a/ The exact phrasing of the three clauses (designated 1, 2, and 3 within parenthesis) on deductible or franchise was as follows: (1) Applied to all claims of whatsoever nature (including claims under sue and labor clause and under collision clause.) (2) Applies to all claims (except collision.) (3) Applies to all claims (except sue and labor and collision). Particular average is included in the second of the three clauses.

TABLE A-29, GULF AREA
PROVISION FOR FRANCHISE OR DEDUCTIBLE AVERAGE IN HULL INSURANCE CONTRACTS, 1950-54

Item	Policy year									
	1950-51		1951-52		1952-53		1953-54		1954-55	
	Percent or Dollars	No.	Percent or Dollars	No.	Percent or Dollars	No.	Percent or Dollars	No.	Percent or Dollars	No.
I. Is there deductible average or franchise clause?										
1. Yes	-	(25)	95.5	(42)	95.5	(42)	96.2	(50)	95.0	(57)
2. No	-	(–)	4.5	(2)	4.5	(2)	3.8	(2)	5.0	(3)
Total reporting	100.0	(25)	100.0	(44)	100.0	(44)	100.0	(52)	100.0	(60)
Don't Know		(–)		(–)		(–)		(–)		(–)
Total sample		(25)		(44)		(44)		(52)		(60)
II. Distribution of policies with deductible average or franchise a/										
A. Franchise (frequencies)										
3. All claims (1)										
4. Except collision (2)										
5. Except sue & labor, & collision (3)										
Total reporting										
B. Franchise (average amount)										
6. Except collision (2)										
C. Deductible (frequencies)										
7. All claims (1)	100.0	(25)	70.1	(31)	72.7	(32)	65.4	(34)	70.0	(42)
8. Except collision(2)	-	(–)	29.9	(11)	27.3	(10)	34.6	(16)	30.0	(15)
9. Except sue & labor, & collision (3)		(–)		(–)		(–)		(–)		(–)
Total reporting		(25)		(44)		(44)		(52)		(60)
D. Deductible (average amount)										
10. All claims (1)	$346		$345		$405		$407		$537	
11. Except collision(2)	-		$318		$222		$469		$422	
12. Except sue and labor, and collision (3)	-		-		-		-		-	

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a/ No franchise clause. See Table A-29, New England

PROVISION FOR FRANCHISE OR DEDUCTIBLE AVERAGE IN HULL INSURANCE CONTRACTS, 1950-54

Item	Policy year									
	1950-51		1951-52		1952-53		1953-54		1954-55	
	Percent or Dollars	No.	Percent or Dollars	No.	Percent or Dollars	No.	Percent or Dollars	No.	Percent or Dollars	No.
I. Is there deductible average or franchise clause?										
1. Yes	96.9	(62)	96.9	(63)	98.6	(71)	98.6	(69)	96.9	(63)
2. No	3.1	(2)	3.1	(2)	-	(1)	-	(1)	3.1	(2)
Total reporting	100.0	(64)	100.0	(65)	100.0	(72)	100.0	(70)	100.0	(65)
Don't Know		(–)		(–)		(–)		(–)		(–)
Total sample		(64)		(65)		(72)		(70)		(65)
II. Distribution of policies with deductible average or franchise a/										
A. Franchise (frequencies)										
3. All claims (1)	-	(–)	1.5	(1)	2.8	(2)	-	(–)	-	(–)
4. Except collision(2)	75.0	(48)	70.8	(46)	72.2	(52)	65.7	(46)	56.9	(37)
5. Except sue & labor & collision (3)	-	(–)	-	(–)	-	(–)	-	(–)	-	(–)
Total reporting	100.0	(64)	100.0	(65)	100.0	(72)	100.0	(70)	100.0	(65)
B. Franchise (average amount)										
6. Except collision (2)	$2,277		$2,500		$2,339		$2,174		$2,139	
C. Deductible (frequencies)										
7. All claims (1)	14.1	(9)	18.5	(12)	11.2	(8)	24.4	(17)	28.2	(18)
8. Except collision(2)	7.8	(5)	76.9	(5)	11.1	(8)	8.6	(6)	9.2	(6)
9. Except sue & labor & collision (3)	29.7	(19)	27.7	(18)	33.4	(24)	37.3	(26)	35.6	(23)
Total reporting	100.0	(64)	100.0	(65)	100.0	(72)	100.0	(70)	100.0	(65)
D. Deductible (average amount)										
10. All claims (1)	$244		$308		$244		$325		$405	
11. Except collision(2)	$751		$830		$636		$580		$1,100	
12. Except sue and labor, and collision (3)	$442		$446		$446		$449		$453	

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a/ The exact phrasing of the three clauses (designated 1, 2, and 3 within parenthesis) on deductible or franchise was as follows: (1) Applied to all claims of whatsoever nature (including claims under sue and labor clause and under collision clause.) (2) Applies to all claims (except collision.) (3) Applies to all claims (except sue and labor and collision). Particular average is included in the second of the three clauses.

TABLE A-30, NEW ENGLAND
EXCLUSIONS ON LOSS OF EQUIPMENT PROVIDED BY HULL INSURANCE CONTRACTS, 1950-54

Item	Policy year									
	1950-51		1951-52		1952-53		1953-54		1954-55	
	Percent	No.	Percent	No.	Percent	No.	Percent	No.	Percent	No.
I. Any exclusions on loss of equipment?										
1. Yes	87.7	(71)	77.0	(67)	75.0	(72)	83.7	(82)	83.0	(73)
2. No	12.3	(10)	23.0	(20)	25.0	(24)	16.3	(16)	17.0	(15)
Total reporting	100.0	(81)	100.0	(87)	100.0	(96)	100.0	(98)	100.0	(88)
Don't Know		(5)		(6)		(5)		(1)		(1)
Total sample		(86)		(93)		(101)		(99)		(89)
II. Distribution of exclusions on loss of equipment a/										
3. Fishing gear, nets, and tackle are covered only	1.4	(1)	1.5	(1)	1.4	(1)	1.2	(1)	1.4	(1)
4. Fishing gear, nets, and tackle are covered only when under deck	95.8	(68)	95.5	(64)	97.2	(70)	97.6	(80)	95.9	(70)
5. Fishing gear, nets, tackle, cables, and anchors are not covered when lost or sacrificed on fishing grounds	2.8	(2)	3.0	(2)	1.4	(1)	1.2	(1)	2.7	(2)
Total reporting exclusions	100.0	(71)	100.0	(67)	100.0	(72)	100.0	(82)	100.0	(73)

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a/ Exclusions do not apply to the case the vessel is a total loss. The content of these exclusions varied in the different policy forms used by the insurers, but variations were slight and for the purpose at hand unimportant.

EXCLUSIONS ON LOSS OF EQUIPMENT PROVIDED BY HULL
1950-54

Item	Policy year									
	1950-51		1951-52		1952-53		1953-54		1954-55	
	Percent	No.	Percent	No.	Percent	No.	Percent	No.	Percent	No.
I. Any exclusions on loss of equipment?										
1. Yes	-	(20)	79.5	(35)	79.5	(35)	76.9	(40)	70.0	(42)
2. No.	-	(5)	20.5	(9)	20.5	(9)	23.1	(12)	30.0	(18)
Total reporting	100.0	(25)	100.0	(44)	100.0	(44)	100.0	(52)	100.0	(60)
Don't Know		(–)		(–)		(–)		(–)		(–)
Total sample		(25)		(44)		(44)		(52)		(60)
II. Distribution of exclusions on loss of equipment a/										
3. Fishing gear, nets, and tackle are covered only	-	(19)	71.4	(25)	68.5	(24)	67.5	(27)	78.5	(33)
4. Fishing gear, nets, and tackle are covered only when under deck	-	(–)	11.4	(4)	8.6	(3)	7.5	(3)	4.8	(2)
5. Fishing gear, nets, tackle, cables, and anchors are not covered when lost or sacrificed on fishing grounds	-	(1)	17.2	(6)	22.9	(8)	25.0	(10)	16.7	(7)
Total reporting exclusions	100.0	(20)	100.0	(35)	100.0	(35)	100.0	(40)	100.0	(42)

a/ Exclusions do not apply to the case the vessel is a total loss. The content of these exclusions varied in the different policy forms used by the insurers, but variations were slight and for the purpose at hand unimportant.

TABLE A-30, CALIFORNIA
EXCLUSIONS ON LOSS OF EQUIPMENT PROVIDED BY HULL INSURANCE CONTRACTS
1950-54

Item	Policy year 1950-51 Percent	 1950-51 No.	 1951-52 Percent	 1951-52 No.	 1952-53 Percent	 1952-53 No.	 1953-54 Percent	 1953-54 No.	 1954-55 Percent	 1954-55 No.
I. Any exclusions on loss of equipment?										
1. Yes	96.9	(62)	95.4	(62)	97.2	(70)	97.2	(69)	95.5	(63)
2. No	3.1	(2)	4.6	(3)	2.8	(2)	2.8	(2)	4.5	(3)
Total reporting	100.0	(64)	100.0	(65)	100.0	(72)	100.0	(71)	100.0	(66)
Don't Know		(-)		(-)		(-)		(-)		(-)
Total sample		(64)		(65)		(72)		(71)		(66)
II. Distribution of exclusions on loss of equipment a/										
3. Fishing gear, nets, and tackle are covered only	9.7	(6)	9.7	(6)	8.6	(6)	7.2	(5)	7.9	(5)
4. Fishing gear, nets, and tackle are covered only when under deck.	3.2	(2)	3.2	(2)	4.3	(3)	1.4	(1)	1.6	(1)
5. Fishing gear, nets, tackle, cables, and anchors are not covered when lost or sacrificed on fishing grounds	87.1	(54)	87.1	(54)	87.1	(61)	91.4	(63)	90.5	(57)
Total reporting exclusions	100.0	(62)	100.0	(62)	100.0	(70)	100.0	(69)	100.0	(63)

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a/ Exclusions do not apply to the case the vessel is a total loss. The content of these exclusions varied in the different policy forms used by the insurers, but variations were slight and for the purpose at hand unimportant.

TABLE A-31, NEW ENGLAND, AMOUNT OF INSURANCE, GROSS PREMIUM PER CREW MEMBER, AND TOTAL GROSS PREMIUM FOR PROTECTION AND INDEMNITY INSURANCE, 1950-54

Item a/	Policy year 1950-51	1951-52	1952-53	1953-54	1954-55
I. Amount of insurance					
1. Total average	$ 88,300	$ 79,800	$109,000	$114,500	$176,200
2. First one-third	17,800	18,200	20,200	22,000	31,300
3. Second one-third	47,400	44,600	48,900	62,000	126,500
4. Third one-third	201,200	175,700	260,200	261,400	370,800
II. Gross premium per crew member					
5. Total average	$172	$167	$200	$220	$291
6. First one-third	129	125	133	142	199
7. Second one-third	175	165	178	205	283
8. Third one-third	213	212	290	312	390
III. Total gross premium					
9. Total average	$ 1,425	$ 1,352	$ 1,597	$ 1,941	$ 2,543
10. First one-third	581	510	579	620	782
11. Second one-third	1,324	1,126	1,389	1,587	2,121
12. Third one-third	2,373	2,411	2,830	3,626	4,731
IV. Coverage index					
13. Premium--Amount of insurance ratio (Rows 9÷1)	1.61	1.69	1.47	1.70	1.44
V. Number of policy years in sample	(79)	(86)	(88)	(100)	(92)

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a/ Items 1, 5, and 9 represent arithmetic means of amounts of all the policies in each sample; items 2-4, 6-8, and 10-12 are arithmetic means of lower, middle, and upper one-thirds of such amounts arranged in an array.

TABLE A-31, GULF AREA

AMOUNT OF INSURANCE, GROSS PREMIUM PER CREW MEMBER, AND TOTAL GROSS PREMIUM FOR PROTECTION AND INDEMNITY INSURANCE, 1950-54

	POLICY YEAR				
Item a/	1950-51	1951-52	1952-53	1953-54	1954-55
I. Amount of insurance	$36,000	$28,300	$25,200	$41,400	$44,300
II. Gross premium per crew member	$ 313	$ 129	$ 110	$ 134	$ 129
III. Total gross premium	$ 436	$ 321	$ 860	$ 509	$ 485
IV. Coverage index (Premium - amount of insurance ratio Rows III ÷ I)	1.21	1.13	3.41	1.23	1.09
V. Number of policy years in sample	(4)	(8)	(6)	(10)	(11)

a/ Item I to III represent arithmetic means of amounts of all the policies in each sample

TABLE A-31, CALIFORNIA
AMOUNT OF INSURANCE AND GROSS PREMIUM FOR PROTECTION AND INDEMNITY INSURANCE, 1950-54

Item [a]	POLICY YEAR				
	1950-51	1951-52	1952-53	1953-54	1954-55
I. Amount of insurance					
1. Total average	$142,100	$171,900	$170,700	$157,200	$168,100
2. First fifty per cent	60,600	64,100	64,800	57,100	65,700
3. Second fifty per cent	222,100	279,800	274,500	255,400	270,400
II. Total gross premium					
7. Total average	$ 378	$ 399	$ 469	$ 681	$ 717
8. First fifty per cent	283	296	316	418	449
9. Second fifty per cent	473	502	622	900	986
III. Coverage index					
10. Premium Amount of insurance ratio (Rows 7 ÷ 1)	0.27	0.23	0.28	0.43	0.43
IV. Number of policy years in sample	(57)	(70)	(69)	(61)	(54)

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[a] Items 1, 4, and 7 represent arithmetic means of amounts of all the policies in each sample. Items 2-3, 5-6, and 8-9 are arithmetic means of one-half of such amounts less than and one-half more than the median. Gross premium in California are not computed on the basis of size of crew.

TABLE A-32, NEW ENGLAND
LIMITATIONS PROVIDED BY PROTECTION AND INDEMNITY INSURANCE CONTRACTS, 1950-54

Item a/	Policy year 1950-51 Percent	1950-51 No.	1951-52 Percent	1951-52 No.	1952-53 Percent	1952-53 No.	1953-54 Percent	1953-54 No.	1954-55 Percent	1954-55 No.
I. Does the policy include any of the following deductibles?										
1. Yes	34.6	(27)	41.0	(34)	56.4	(44)	50.0	(48)	69.6	(64)
2. No	65.4	(51)	59.0	(49)	43.6	(34)	50.0	(48)	30.4	(28)
Total reporting	100.0	(78)	100.0	(83)	100.0	(78)	100.0	(96)	100.0	(92)
Don't Know		(1)		(1)		(1)		(1)		(0)
Total sample		(79)		(84)		(79)		(97)		(92)
II. Distribution of policies with limitations										
A. Frequencies										
3. Deductible clause applies to personal injuries	-	(7)	26.5	(9)	53.5	(24)	50.0	(24)	70.3	(45)
4. Deductible clause applies to property damage	-	(10)	58.8	(20)	81.4	(36)	85.4	(41)	89.1	(57)
Total reporting deductibles	100.0	(27)	100.0	(34)	100.0	(44)	100.0	(48)	100.0	(64)
B. Average amount										
5. Personal injuries	$254		$256		$220		$185		$218	
6. Property damage	$225		$228		$210		$196		$206	
III. Is owner on board covered for maintenance and cure?										
7. Yes	44.8	(34)	53.2	(42)	63.5	(54)	62.1	(59)	64.0	(57)
8. No	55.2	(42)	46.8	(37)	36.5	(31)	37.9	(36)	36.0	(32)
Total reporting	100.0	(76)	100.0	(79)	100.0	(85)	100.0	(95)	100.0	(89)
Don't Know		(3)		(5)		(4)		(2)		(3)
Total sample		(79)		(84)		(89)		(97)		(92)

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a/ Policies for excess insurance were excluded. The sample included 1, 4, 8, 9, and 1 such contracts for 1950, 1951, 1952, 1953, and 1954, respectively. With the exception of 1 contract in 1952 and 2 in 1953, which provided for a $250 deductible for personal injuries and property damage, all other contracts provided for no deductibles except 3 contracts in 1952 and one in 1953, all covered the owner on board for maintenance and cure

TABLE A-32, GULF AREA
LIMITATIONS PROVIDED BY PROTECTION AND INDEMNITY INSURANCE CONTRACTS, 1950-54

Item a/	Policy year									
	1950-51		1951-52		1952-53		1953-54		1954-55	
	Percent	No.	Percent	No.	Percent	No.	Percent	No.	Percent	No.
I. Does the policy include any of the following deductibles?										
1. Yes	-	(4)	-	(7)	-	(5)	-	(8)	-	(11)
2. No	-	(—)	-	(1)	-	(1)	-	(2)	-	(1)
Total reporting	100.0	(4)	100.0	(8)	100.0	(6)	100.0	(10)	100.0	(12)
Don't Know	-	(—)	-	(—)	-	(—)	-	(—)	-	(—)
Total sample	100.0	(4)	100.0	(8)	100.0	(6)	100.0	(10)	100.0	(12)
II. Distribution of policies with limitations										
A. Frequencies										
3. Deductible clause applies to personal injuries	-	(4)	-	(7)	-	(5)	-	(8)	-	(11)
4. Deductible clause applies to property damage	-	(4)	-	(7)	-	(5)	-	(8)	-	(11)
Total reporting deductibles	100.0	(4)	100.0	(7)	100.0	(5)	100.0	(8)	100.0	(11)
B. Average amount										
5. Personal injuries	$250		$264		$220		$356		$659	
6. Property damage	$250		$264		$220		$356		$659	
III. Is owner or board covered for maintenance and cure?										
7. Yes	-	(—)	-	(—)	-	(—)	-	(—)	-	(2)
8. No	-	(4)	-	(8)	-	(6)	-	(10)	-	(10)
Total reporting	100.0	(4)	100.0	(8)	100.0	(6)	100.0	(10)	100.0	(12)
Don't Know	-	(—)	-	(—)	-	(—)	-	(—)	-	(—)
Total sample	100.0	(4)	100.0	(8)	100.0	(6)	100.0	(10)	100.0	(12)

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a/ No excess insurance policies were found in the sample.

TABLE A-32, CALIFORNIA
LIMITATIONS PROVIDED BY PROTECTION AND INDEMNITY INSURANCE CONTRACTS,
1950-54

Item a/	Policy year									
	1950-51		1951-52		1952-53		1953-54		1954-55	
	Percent	No.	Percent	No.	Percent	No.	Percent	No.	Percent	No.
I. Does the policy include any of the following deductibles?										
1. Yes	100.0	(57)	100.0	(70)	100.0	(70)	100.0	(61)	100.0	(56)
2. No	-	(–)	-	(–)	-	(–)	-	(–)	-	(–)
Total reporting	100.0	(57)	100.0	(70)	100.0	(70)	100.0	(61)	100.0	(56)
Don't Know	-	(–)	-	(–)	-	(–)	-	(–)	-	(–)
Total sample	100.0	(58)	100.0	(71)	100.0	(71)	100.0	(62)	100.0	(56)
II. Distribution of policies with limitations										
A. Frequencies										
3. Deductible clause applies to personal injuries	100.0	(57)	100.0	(70)	100.0	(70)	100.0	(61)	98.2	(55)
4. Deductible clause applies to property damage	100.0	(57)	100.0	(70)	100.0	(70)	100.0	(61)	100.0	(56)
Total reporting deductibles	100.0	(57)	100.0	(70)	100.0	(70)	100.0	(61)	100.0	(56)
B. Average amount										
5. Personal injuries	$628		$664		$640		$684		$677	
6. Property damage	$242		$246		$244		$262		$272	
III. Is owner on board covered for maintenance and cure?										
7. Yes	5.3	(3)	4.3	(3)	4.3	(3)	4.9	(3)	7.1	(4)
8. No	94.7	(54)	95.7	(67)	95.7	(67)	95.1	(58)	92.9	(52)
Total reporting	100.0	(57)	100.0	(70)	100.0	(70)	100.0	(61)	100.0	(56)
Don't Know	-	(–)	-	(–)	-	(–)	-	(–)	-	(–)
Total sample	100.0	(58)	100.0	(71)	100.0	(71)	100.0	(61)	100.0	(56)

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a/ Policies for excess insurance were excluded. The sample included one excess insurance contract for 1950-53 with no deductibles and coverage for owner on board.

TABLE A-33
AVERAGE INSURANCE RATES FOR HULL INSURANCE OF ALL ACTIVE WOOD VESSELS BY PORT OF VESSEL REGISTRATION (HOME PORT)

Area-Home port	Average insurance rate (percent)	Policy years in Sample	Average age in years	Average gross tonnage	Number of vessels of sample
New England	(6.4)	(386)	(16.9)	(63.2)	(105)
1. Rockland, Maine	6.0	(4)	11.0	15.0	(1)
2. Portland, Maine	8.4	(18)	29.3	31.2	(5)
3. Gloucester, Mass.	6.7	(86)	16.6	73.4	(28)
4. Boston, Mass.	5.5	(45)	11.5	109.0	(12)
5. New Bedford, Mass.	6.2	(152)	17.9	63.1	(40)
6. Plymouth, Mass.	6.8	(47)	17.1	29.2	(10)
7. New London, Conn.	5.5	(34)	14.1	31.9	(9)
Gulf Area	(5.6)	(191)	(12.0)	(37.2)	(65)
1 Biloxi, Miss.	10.0	(2)	50.0	24.0	(1)
2. New Orleans, La.	6.3	(13)	12.1	41.0	(7)
3. Morgan City, La.	5.9	(61)	14.8	36.8	(18)
4. Galveston, Texas	5.4	(43)	11.8	32.7	(12)
5. Corpus Christi, Texas	5.3	(32)	7.7	42.1	(11)
6. Brownsville, Texas	5.6	(40)	9.4	36.8	(16)
I. California	(7.3)	(338)	(14.0)	(136.0)	(87)
1. San Diego, Calif.	6.9	(127)	11.6	182.9	(36)
2. Los Angeles, Calif	7.6	(184)	14.7	111.9	(43)
3. San Francisco, Calif.	7.8	(23)	21.9	48.1	(7)
4. Eureka, Calif.	7.1	(4)	17.0	95.0	(1)

TABLE A-34
CLASSIFICATION OF VESSELS ON THE BASIS OF PAID LOSS RECORD UNDER HULL INSURANCE

	Number of vessels in each class		Total losses 1950-54		Number of claims	Losses per claim	Policy years studied	Losses per policy year studied
	Per-cent	Vessels	Per-cent	Thousand dollars				
I. New England								
1. Active wood with best loss record[a]	40.9	(52)	2.6	($17.6)	(48)	$ 366	(184)	$ 96
2. Active wood with worst loss record[b]	41.7	(53)	52.8	(364.4)	(204)	1,786	(203)	1,795
3. Active steel	8.7	(11)	5.4	(37.3)	(14)	2,663	(49)	761
4. Lost wood	8.7	(11)	39.2	(270.4)	(18)	15,022	(31)	8,723
Total in sample	100.0	(127)	100.0	(689.7)	(284)	2,428	(465)	1,489
II. Gulf Area								
1. Active wood with best loss record[a]	41.0	(32)	-	(-)	(-)	-	(88)	-
2. Active wood with worst loss record[b]	42.3	(33)	24.2	($40.9)	(31)	$1,319	(101)	$ 405
3. Active steel	11.6	(9)	25.5	(43.1)	(28)	1,539	(35)	1,231
4. Lost wood	5.1	(4)	50.3	(85.0)	(3)	28,333	(8)	10,625
Total in sample	100.0	(78)	100.0	(169.0)	(62)	2,726	(227)	744
III. California								
1. Active wood with best loss record[a]	43.8	(42)	.4	($3.2)	(11)	$ 288	(139)	$ 22
2. Active wood with worst loss record[b]	43.7	(42)	23.2	(200.6)	(108)	1,909	(159)	1,223
3. Active steel	3.1	(3)	5.2	(45.0)	(3)	15,016	(13)	3,465
4. Lost wood	9.4	(9)	71.2	(615.1)	(21)	29,291	(24)	25,630
Total in sample	100.0	(96)	100.0	(863.9)	(143)	6,042	(335)	2,579

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[a] Fifty per cent (of active wood vessels with no or smallest paid losses per policy year) studied.

[b] Fifty per cent of active wood vessels with largest paid losses per policy year studied.

TABLE A-35

HULL INSURANCE RATE, AGE, AND GROSS TONNAGE OF VESSELS CLASSIFIED ON THE BASIS OF PAID LOSS RECORD

Vessel characteristics	Active wood vessels		Active steel vessels	Lost wood vessels
	Best loss record[a]	Worst loss record[b]		
I. New England (average)				
1. Insurance rate (per cent)	6.7	5.8	2.8	7.1
2. Age (in years)	18	16	18	32
3. Gross tonnage	46	81	226	50
Vessels in sample	(52)	(53)	(11)	(11)
II. Gulf Area				
1. Insurance rate (per cent)	5.2	5.9	4.0	6.8
2. Age (in years)	13	11	7	12
3. Gross tonnage	37	37	98	50
Vessels in sample	(32)	(33)	(9)	(4)
III. California (averages)				
1. Insurance rate (per cent)	7.4	9.7	4.1	8.4
2. Age (in years)	14	14	8	21
3. Gross tonnage	126	145	396	115
Vessels in sample	(42)	(42)	(3)	(8)

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[a] Fifty per cent of active wood vessels with no or smallest paid losses per policy year studied.

[b] Fifty per cent of active wood vessels with largest paid losses per policy year studied.

TABLE A-36

OWNER'S OCCUPATION
OF VESSELS CLASSIFIED ON THE BASIS OF PAID LOSS RECORD
UNDER HULL INSURANCE

Area Owner's Occupation	Active Wood Vessels With best loss record[a]		Active Wood Vessels With worst loss record[b]		Active Steel vessels		Lost Wood vessels		Total in sample	
	Percent	No.	Percent	No.	Percent	No.	Percent	No.	Percent	No.
I. New England										
1. Captain-owner	52.7	(30)	36.8	(21)	-	(–)	10.5	(6)	100.0	(57)
2. Fish dealer or processor	-	(1)	-	(3)	-	(6)	-	(-)	-	(10)
3. Absentee owner	35.0	(21)	48.4	(29)	8.3	(5)	8.3	(5)	100.0	(60)
Total reporting	40.9	(52)	41.7	(53)	8.7	(11)	8.7	(11)	100.0	(127)
II. Gulf Area										
1. Captain-owner	-	(10)	-	(15)	-	(1)	-	(2)	-	(28)
2. Fish dealer or processor	43.7	(14)	34.4	(11)	18.8	(6)	3.1	(1)	100.0	(32)
3. Absentee owner	-	(8)	-	(7)	-	(2)	-	(1)	-	(18)
Total reporting	41.0	(32)	42.4	(33)	11.5	(9)	5.1	(4)	100.0	(78)
III. California										
1. Captain-owner	48.2	(27)	42.9	(24)	1.8	(1)	7.1	(4)	100.0	(56)
2. Fish dealer or processor	-	(–)	-	(–)	-	(-)	-	(-)	-	(–)
3. Absentee owner	37.5	(15)	45.0	(18)	5.0	(2)	12.5	(5)	100.0	(40)
Total reporting	43.8	(42)	43.8	(42)	3.1	(3)	9.3	(9)	100.0	(96)

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[a] Fifty per cent of active wood vessels with no or smallest paid losses per policy year studied.
[b] Fifty per cent of active wood vessels with largest paid losses per policy year studied.

TABLE A-37
OWNER'S OCCUPATIONAL ACTIVITY OTHER THAN BEING OR IN ADDITION TO BEING CAPTAIN-OWNER, FISH DEALER OR PROCESSOR FOR VESSELS CLASSIFIED ON THE BASIS OF PAID LOSS RECORD UNDER HULL INSURANCE

Area- Owner's other occupational activity	Active wood vessels with best loss record[a]		Active wood vessels with worst loss record[b]		Active steel vessels		Lost wood vessels		Total in sample	
	Percent	No.	Percent	No.	Percent	No.	Percent	No.	Percent	No.
I. New England										
1. Owner with other activity	44.4	(16)	41.7	(15)	5.6	(2)	8.3	(3)	100.0	(36)
2. Owner with no other activity	40.9	(36)	40.9	(36)	10.2	(9)	8.0	(7)	100.0	(88)
Total reporting	41.9	(52)	41.1	(51)	8.9	(11)	8.1	(10)	100.0	(124)
II. Gulf Area										
1. Owner with other activity	-	(6)	-	(5)	-	(2)	-	(—)	-	(13)
2. Owner with no other activity	39.1	(25)	43.7	(28)	10.9	(7)	6.3	(4)	100.0	(64)
Total reporting	40.3	(31)	42.8	(33)	11.7	(9)	5.2	(4)	100.0	(77)
III. California										
1. Owner with other activity	42.4	(14)	39.4	(13)	3.0	(1)	15.2	(5)	100.0	(33)
2. Owner with no other activity	44.4	(28)	46.1	(29)	3.2	(2)	6.3	(4)	100.0	(63)
Total reporting	43.8	(42)	43.8	(42)	3.1	(3)	9.3	(9)	100.0	(96)

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a/Fifty per cent of active wood vessels with no or smallest paid losses per policy year included.

b/Fifty per cent of active wood vessels with largest paid losses per policy year studied.

TABLE A-38

NUMBER OF VESSELS INTERVIEWED OWNER OWNS BY VESSELS CLASSIFIED ON THE BASIS OF PAID LOSS RECORD UNDER HULL INSURANCE

Area - Number of vessels owned besides the one being interviewed	Active wood vessels				Active steel vessels		Lost wood vessels		Total in sample	
	With best loss record[a]		With worst loss record[b]							
	Percent	No.	Percent	No.	Percent	No.	Percent	No.	Percent	No.
I. New England										
1. None	56.2	(41)	35.6	(26)	1.4	(1)	6.8	(5)	100.0	(73)
2. One or more	20.4	(11)	50.0	(27)	18.5	(10)	11.1	(6)	100.0	(54)
Total reporting	40.9	(52)	41.7	(53)	8.7	(11)	8.7	(11)	100.0	(127)
II. Gulf Area										
1. None	31.4	(11)	51.4	(18)	8.6	(3)	8.6	(3)	100.0	(35)
2. One or more	48.8	(21)	34.9	(15)	14.0	(6)	2.3	(1)	100.0	(43)
Total reporting	41.0	(32)	42.3	(33)	11.6	(9)	5.1	(4)	100.0	(78)
III. California										
1. None	47.5	(28)	40.7	(24)	3.4	(2)	8.4	(5)	100.0	(59)
2. One or more	37.8	(14)	48.7	(18)	2.7	(1)	10.8	(4)	100.0	(37)
Total reporting	43.8	(42)	43.8	(42)	3.1	(3)	9.3	(9)	100.0	(96)

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[a] Fifty per cent of active wood vessels with no or smallest paid losses per policy year studied.

[b] Fifty per cent of active wood vessels with largest paid losses per policy year studied.

TABLE A-39
CAPTAIN'S OWNERSHIP INTEREST IN VESSELS CLASSIFIED ON THE BASIS OF PAID LOSS RECORD UNDER HULL INSURANCE

Area-Captain's interest in vessel	Active wood vessels with best loss record[a]		Active wood vessels with worst loss record[b]		Active steel vessels		Lost wood vessels		Total in sample	
	Percent	No.	Percent	No.	Percent	No.	Percent	No.	Percent	No.
I. New England										
1. Sole owner	60.0	(21)	31.4	(11)	-	(—)	8.6	(3)	100.0	(35)
2. Partner or stockholder	34.0	(17)	56.	(28)	-	(—)	10.0	(5)	100.0	(50)
3. No interest	33.3	(14)	33.3	(14)	26.2	(11)	7.2	(3)	100.0	(42)
Total reporting	40.9	(52)	41.7	(53)	8.7	(11)	8.7	(11)	100.0	(127)
II. Gulf Area										
1. Sole owner	43.3	(13)	46.7	(14)	6.7	(2)	3.3	(1)	100.0	(30)
2. Partner or stockholder	-	(7)	-	(8)	-	(—)	-	(1)	-	(16)
3. No interest	37.5	(12)	34.3	(11)	21.9	(7)	6.3	(2)	100.0	(32)
Total reporting	41.0	(32)	42.4	(33)	11.5	(9)	5.1	(4)	100.0	(78)
III. California										
1. Sole owner	-	(11)	-	(6)	-	(—)	-	(—)	-	(17)
2. Partner or stockholder	40.8	(29)	45.1	(32)	4.2	(3)	9.9	(7)	100.0	(71)
3. No interest	-	(2)	-	(4)	-	(—)	-	(2)	-	(8)
Total reporting	43.8	(42)	43.8	(42)	3.1	(3)	9.3	(9)	100.0	(96)

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[a] Fifty per cent of active wood vessels with no or smallest paid losses per policy year studied.

[b] Fifty per cent of active wood vessels with largest paid losses per policy year studied.

TABLE A-40
FAMILY TIES BETWEEN VESSEL OWNER AND CREW OF VESSELS CLASSIFIED ON THE BASIS OF PAID LOSS RECORD UNDER HULL INSURANCE [a]

Area - Half or more of the crew related or not related to owner	Active wood vessels with best loss record[b] Percent	No.	Active wood vessels with worst loss record[c] Percent	No.	Active steel vessels Percent	No.	Lost wood vessels Percent	No.	Total in sample Percent	No.
I. New England										
1. Owner related to crew	67.8	(97)	27.3	(39)	-	(—)	4.9	(7)	100.0	(143)
2. Owner not related to crew	35.8	(207)	47.4	(274)	11.1	(64)	5.7	(33)	100.0	(578)
Total reporting	42.2	(304)	43.4	(313)	8.9	(64)	5.5	(40)	100.0	(721)
II. Gulf Area										
1. Owner related to crew	49.5	(49)	50.5	(50)	-	(—)	-	(—)	100.0	(99)
2. Owner not related to crew	38.8	(127)	43.1	(141)	14.4	(47)	3.7	(12)	100.0	(327)
Total reporting	41.3	(176)	44.9	(191)	11.0	(47)	2.8	(12)	100.0	(426)
III. California										
1. Owner related to crew	56.0	(75)	44.0	(59)	-	(—)	-	(—)	100.0	(134)
2. Owner not related to crew	41.9	(166)	46.7	(185)	4.3	(17)	7.1	(28)	100.0	(396)
Total reporting	45.5	(241)	46.0	(244)	3.2	(17)	5.3	(28)	100.0	(530)

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[a] Based on sum of yearly responses for 1950-55.

[b] Fifty per cent of active wood vessels with no or smallest paid losses per policy year studied.

[c] Fifty per cent of active wood vessels with largest paid losses per policy year studied.

TABLE A - 41
NATIONAL ORIGIN OF OFFICER PERSONNEL OF VESSELS CLASSIFIED ON THE BASIS OF PAID LOSS RECORD UNDER HULL INSURANCE

Area- Major categories of national origin of officer personnel	Active wood vessels With best loss record[a] Percent	No.	With worst loss record[b] Percent	No.	Active Steel vessels Percent	No.	Lost Wood vessels Percent	No.	Total in sample Percent	No.
I. New England										
1. "Italian"	30.6	(11)	18.6	(8)	-	(—)	-	(5)	25.0	(24)
2. "Portuguese"	44.4	(16)	23.3	(10)	-	(—)	-	(1)	28.1	(27)
3. "Canadian"	13.9	(5)	23.3	(10)	-	(10)	-	(1)	27.1	(26)
4. "Scandinavian"	11.1	(4)	34.8	(15)	-	(—)	-	(-)	19.8	(19)
Total reporting	100.0	(36)	100.0	(43)	-	(10)	-	(7)	100.0	(96)
II. Gulf Area										
1. "American-French", "French", "Italian"	-	(13)	-	(11)	-	(1)	-	(2)	51.9	(27)
2. "American"	-	(4)	-	(3)	-	(1)	-	(-)	15.4	(8)
3. "Anglo-Saxon", "Dutch"	-	(8)	-	(8)	-	(1)	-	(-)	32.7	(17)
Total reporting	100.0	(25)	100.0	(22)	100.0	(3)	100.0	(2)	100.0	(52)
III. California										
1. "Italian"	37.9	(14)	27.8	(10)	-	(1)	-	(1)	-	(26)
2. "American"	24.3	(9)	11.1	(4)	-	(-)	-	(-)	-	(13)
3. "Yugoslav"	21.6	(8)	38.9	(14)	-	(-)	-	(6)	-	(28)
4. "Portuguese"	10.8	(4)	22.2	(8)	-	(1)	-	(1)	-	(14)
5. "Anglo-Saxon"	5.4	(2)	-	(-)	-	(-)	-	(-)	-	(2)
Total reporting	100.0	(37)	100.0	(36)	100.0	(2)	100.0	(8)	100.0	(83)

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a/Fifty per cent of active wood vessels with no or smallest paid losses per policy year studied.
b/Fifty per cent of active wood vessels with largest paid losses per policy year studied.

TABLE A-42
CONSTRUCTION STANDARDS AND QUALIFICATIONS OF OFFICER PERSONNEL OF VESSELS CLASSIFIED ON THE BASIS OF PAID LOSS RECORD UNDER HULL INSURANCE

Area - and vessel class	Vessels having the following characteristics: Classified under rules Percent	No.	Captain licensed Percent	No.	Engineer licensed Percent	No.	Vessels in sample Percent	No.
I. New England								
1. Active wood with best loss record[a]	21.2	(11)	9.6	(5)	3.8	(2)	100.0	(52)
2. Active wood with worst loss record[b]	28.3	(15)	11.3	(6)	3.8	(2)	100.0	(53)
3. Active steel	-	(8)	-	(10)	-	(9)	-	(11)
4. Lost wood	-	(3)	-	(1)	-	(—)	-	(11)
Total reporting	29.1	(37)	17.3	(22)	10.2	(13)	100.0	(127)
II. Gulf Area								
1. Active wood with best loss record[a]	18.8	(6)	-	(1)	(c)		100.0	(32)
2. Active wood with worst loss record[b]	21.2	(7)	-	(—)			100.0	(33)
3. Active steel	-	(4)	-	(—)			-	(9)
4. Lost wood	-	(2)	-	(—)			-	(4)
Total reporting	24.4	(19)	-	(1)			100.0	(78)
III. California								
1. Active wood with best loss record[a]	42.9	(18)	31.0	(13)	26.2	(11)	100.0	(42)
2. Active wood with worst loss record[b]	52.4	(22)	35.7	(15)	26.2	(11)	100.0	(42)
3. Active steel	-	(3)	-	(1)	-	(1)	-	(3)
4. Lost wood	-	(2)	-	(1)	-	(—)	-	(9)
Total reporting	46.9	(45)	31.3	(30)	24.0	(23)	100.0	(96)

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a/Fifty per cent of active wood vessels with no or smallest paid losses per policy year studied.
b/Fifty per cent of active wood vessels with largest paid losses per policy year studied.
c/None.

TABLE A - 43
CERTAIN PREVENTIVE MEASURES OF VESSELS CLASSIFIED ON THE BASIS OF PAID LOSS RECORD UNDER HULL INSURANCE

Area - and Vessel Class	Vessels having the following characteristics: Hauled twice or more in 1954 Percent	No.	Hauled twice or more in 1955 Percent	No.	Surveyed when insured for Hull Percent	No.	Vessels in sample Percent	No.
I. New England								
1. Active wood with best loss record[a]	84.6	(44)	82.6	(43)	94.2	(49)	100.0	(52)
2. Active wood with worst loss record[b]	94.3	(50)	94.3	(50)	96.2	(51)	100.0	(53)
3. Active steel	-	(11)	-	(11)	-	(6)	-	(11)
4. Lost wood	-	(–)	-	(–)	-	(10)	-	(11)
Total reporting	82.7	(105)	81.9	(104)	91.3	(116)	100.0	(127)
II. Gulf Area								
1. Active wood with best loss record[a]	93.8	(30)	96.9	(31)	81.3	(26)	100.0	(32)
2. Active wood with worst loss record[b]	90.9	(30)	97.0	(32)	90.9	(30)	100.0	(33)
3. Active steel	-	(5)	-	(6)	-	(5)	-	(9)
4. Lost wood	-	(–)	-	(–)	-	(4)	-	(4)
Total reporting	83.3	(65)	88.5	(69)	83.3	(65)	100.0	(78)
III. California								
1. Active wood with best loss record[a]	81.0	(34)	71.4	(30)	97.6	(41)	100.0	(42)
2. Active wood with worst loss record[b]	85.7	(36)	85.7	(36)	100.0	(42)	100.0	(42)
3. Active steel	-	(3)	-	(3)	-	(3)	-	(3)
4. Lost wood	-	(–)	-	(–)	-	(7)	-	(9)
Total reporting	76.0	(73)	71.9	(69)	97.9	(94)	100.0	(96)

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[a] Fifty per cent of active wood vessels with no or smallest paid losses per policy year studied.

[b] Fifty per cent of active wood vessels with largest paid losses per policy year studied.

TABLE A - 44, NEW ENGLAND
REPORTED TYPE OF COMMUNICATIONS OR NAVIGATION APPARATUS ON BOARD CATEGORIES OF VESSELS CLASSIFIED ON THE BASIS OF PAID LOSS RECORD UNDER HULL INSURANCE

Type of apparatus reported on board the vessel	Active wood vessels				Active Steel vessels		Lost Wood vessels		Total Reporting	
	With best loss record[a]		With worst loss record[b]							
	Percent	No.	Percent	No.	Percent	No.	Percent	No.	Percent	No.
1. Radio-telephone	94.2	(49)	98.1	(52)	-	(11)	-	(11)	96.9	(123)
2. Radio-transmitter	25.0	(13)	39.6	(21)	-	(—)	-	(3)	29.1	(37)
3. Radar	11.5	(6)	26.4	(14)	-	(3)	-	(2)	19.7	(25)
4. Radio direction finder	57.7	(30)	83.0	(44)	-	(11)	-	(8)	73.2	(93)
5. Fathometer or depth finder	90.4	(47)	100.0	(53)	-	(11)	-	(10)	95.3	(121)
6. Loran	51.9	(27)	94.3	(50)	-	(11)	-	(4)	72.4	(92)
Total in sample	100.0	(52)	100.0	(53)	-	(11)	-	(11)	100.0	(127)

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[a] Fifty per cent of active wood vessels with no or smallest paid losses per policy year studied.

[b] Fifty per cent of active wood vessels with largest paid losses per policy year studied.

TABLE A - 44, GULF AREA
REPORTED TYPE OF COMMUNICATION OR NAVIGATION APPARATUS ON BOARD CATEGORIES OF VESSELS CLASSIFIED ON THE BASIS OF PAID LOSSES RECORD UNDER HULL INSURANCE

Type of apparatus reported on board the vessel	Active wood vessels With best loss record[a] Percent	No.	Active wood vessels With worst loss record[b] Percent	No.	Active Steel vessels Percent	No.	Lost Wood vessels Percent	No.	Total Reporting Percent	No.
1. Radio-telephone	75.0	(24)	90.9	(30)	-	(9)	-	(4)	85.9	(67)
2. Radio-transmitter	21.9	(7)	33.3	(11)	-	(5)	-	(3)	33.3	(26)
3. Radio direction finder	12.5	(4)	36.4	(12)	-	(1)	-	(1)	23.1	(18)
4. Fathometer or depth finder	65.6	(21)	84.8	(28)	-	(9)	-	(4)	79.5	(62)
Total in sample	100.0	(32)	100.0	(33)	-	(9)	-	(4)	100.0	(78)

[a] Fifty per cent of active wood vessels with no or smallest paid losses per policy year studied.

[b] Fifty per cent of active wood vessels with largest paid losses per policy year studied.

TABLE A-44, CALIFORNIA
REPORTED TYPE OF COMMUNICATION OR NAVIGATION APPARATUS ON BOARD CATEGORIES OF VESSELS CLASSIFIED ON THE BASIS OF PAID LOSSES RECORD UNDER HULL INSURANCE

Type of apparatus reported on board the vessel	Active wood vessels: With best loss record[a]		Active wood vessels: With worst loss record[b]		Active steel vessels		Lost wood vessels		Total reporting	
	Percent	No.	Percent	No.	Percent	No.	Percent	No.	Percent	No.
1. **Radio-telephone**	100.0	(42)	97.6	(41)	-	(3)	-	(9)	99.0	(95)
2. Radio-transmitter	73.8	(31)	81.0	(34)	-	(3)	-	(7)	78.1	(75)
3. Radar	21.4	(9)	31.0	(13)	-	(3)	-	(1)	27.1	(26)
4. Radio direction finder	88.1	(37)	73.8	(31)	-	(3)	-	(8)	82.3	(79)
5. Fathometer or depth finder	92.9	(39)	95.2	(40)	-	(3)	-	(8)	93.8	(90)
6. Loran	4.8	(2)	14.3	(6)	-	(0)	-	(1)	9.4	(9)
Total in sample	100.0	(42)	100.0	(42)	-	(3)	-	(9)	100.0	(96)

[a] Fifty per cent of active wood vessels with no or smallest paid losses per policy year studied.

[b] Fifty per cent of active wood vessels with largest paid losses per policy year studied.

TABLE A-45, NEW ENGLAND
REPORTED SAFETY EQUIPMENT ON BOARD CATEGORIES OF VESSELS
CLASSIFIED ON THE BASIS OF PAID LOSS RECORD
UNDER HULL INSURANCE

Number and type of safety equipment on board the vessel	Active wood vessels With best loss record[a] Percent	No.	Active wood vessels With worst loss record[b] Percent	No.	Active steel vessels Percent	No.	Lost wood vessels Percent	No.	Total Reporting Percent	No.
1. One or more dories or skiffs	96.2	(50)	94.3	(50)	-	(3)[c]	-	(10)	89.0	(113)
2. One or more life rings	63.5	(33)	86.8	(46)	-	(11)	-	(8)	77.2	(98)
3. One or more fire pumps	38.5	(20)	28.3	(15)	-	(6)	-	(3)	34.6	(44)
4. One or more bilge pumps to fight fire	90.4	(47)	88.7	(47)	-	(11)	-	(9)	89.8	(114)
5. Fixed fire extinguishing system available	7.7	(4)	17.0	(9)	-	(—)	-	(1)	11.0	(14)
6. Three or more portable fire extinguishers	80.8	(42)	88.7	(47)	-	(11)	-	(10)	86.6	(110)
7. Medical chest available and well stocked	82.7	(43)	96.2	(51)	-	(10)	-	(11)	90.6	(115)
Total in sample	100.0	(52)	100.0	(53)	-	(11)	-	(11)	100.0	(127)

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a/Fifty per cent of active wood vessels with no or smallest paid losses per policy year studied.
b/Fifty per cent of active wood vessels with largest paid losses per policy year.
c/Remaining eight steel vessels in sample reported that they are equipped with regulation metal type life boats.

TABLE A-45, GULF AREA
REPORTED SAFETY EQUIPMENT ON BOARD CATEGORIES OF VESSELS CLASSIFIED ON THE BASIS OF PAID LOSSES RECORD UNDER HULL INSURANCE

Number and type of safety equipment on board the vessel	Active wood vessels				Active steel vessels		Lost wood vessels		Total, reporting	
	With best loss record[a]		With worst loss record[b]							
	Percent	No.	Percent	No.	Percent	No.	Percent	No.	Percent	No.
1. One or more dories or skiffs	9.4	(3)	12.1	(4)	-	(5)	-	(–)	15.4	(12)
2. One or more life rings	18.8	(6)	36.4	(12)	-	(–)	-	(1)	24.4	(19)
3. One or more fire pumps	34.4	(11)	12.1	(4)	-	(5)	-	(2)	28.2	(22)
4. One or more bilge pumps to fight fire	81.3	(26)	90.9	(30)	-	(8)	-	(3)	85.9	(67)
5. Fixed fire extinguishing system available	12.5	(4)	9.1	(3)	-	(1)	-	(–)	10.3	(8)
6. Three or more portable fire extinguishers	75.0	(24)	93.9	(31)	-	(8)	-	(4)	85.9	(67)
7. Medical chest available and well stocked	75.0	(24)	72.7	(24)	-	(6)	-	(3)	73.8	(57)
Total in sample	100.0	(32)	100.0	(33)	-	(9)	-	(4)	100.0	(78)

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[a] Fifty per cent of active wood vessels with no or smallest paid losses per policy year studied.
[b] Fifty per cent of active wood vessels with largest paid losses per policy year studied.

TABLE A-45, CALIFORNIA
REPORTED SAFETY EQUIPMENT ON BOARD CATEGORIES OF VESSELS CLASSIFIED ON THE BASIS OF PAID LOSSES RECORD UNDER HULL INSURANCE

Number and type of safety equipment on board the vessel	Active wood vessels				Active steel vessels		Lost wood vessels		Total Reporting	
	With best loss record[a]		With worst loss record[b]							
	Percent	No.	Percent	No.	Percent	No.	Percent	No.	Percent	No.
1. One or more dories or skiffs	71.4	(30)	83.3	(35)	-	(3)	-	(7)	78.1	(75)
2. One or more life rings	33.3	(14)	38.1	(16)	-	(3)	-	(4)	38.5	(37)
3. One or more fire pumps	66.7	(28)	69.0	(29)	-	(3)	-	(4)	66.7	(64)
4. One or more bilge pumps to fight fire	83.3	(35)	76.2	(32)	-	(3)	-	(5)	78.1	(75)
5. Fixed fire extinguishing system available	76.2	(32)	78.6	(33)	-	(3)	-	(6)	77.1	(74)
6. Three or more portable fire extinguishers	47.6	(20)	71.4	(30)	-	(3)	-	(6)	61.5	(59)
7. Medical chest available and well stocked	85.7	(36)	100.0	(42)	-	(3)	-	(9)	93.8	(90)
Total in sample	100.0	(42)	100.0	(42)	-	(3)	-	(9)	100.0	(96)

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[a] Fifty per cent of active wood vessels with no or smallest paid losses per policy year studied.

[b] Fifty per cent of active wood vessels with largest paid losses per policy year studied.

TABLE A-46
VESSELS CLASSIFIED ON THE BASIS OF PAID LOSS RECORD UNDER HULL INSURANCE BY PORT OF VESSEL REGISTRATION (HOME PORT)

Area-Home port	Active wood vessels				Active steel vessels		Lost wood vessels		Vessels in sample	
	With best loss record[a]		With worst loss record[b]							
	Percent	No.	Percent	No.	Percent	No.	Percent	No.	Percent	No.
I. New England										
1. Rockland, Maine	1.9	(1)	-	(—)	-	(—)	-	(—)	.8	(1)
2. Portland, Maine	9.6	(5)	-	(—)	-	(—)	-	(—)	3.9	(5)
3. Gloucester, Mass.	32.7	(17)	20.8	(11)	-	(—)	-	(7)	27.6	(35)
4. Boston. Mass.	7.7	(4)	15.1	(8)	-	(11)	-	(2)	19.7	(25)
5. New Bedford, Mass.	26.9	(14)	49.0	(26)	-	(—)	-	(1)	32.2	(41)
6. Plymouth, Mass.	7.7	(4)	11.3	(6)	-	(—)	-	(—)	7.9	(10)
7. New London, Conn.	13.5	(7)	3.8	(2)	-	(—)	-	(1)	7.9	(10)
Total reporting	100.0	(52)	100.0	(53)	-	(11)	-	(11)	100.0	(127)
II. Gulf Area										
1. Tampa. Florida	6.3	(2)	-	(—)	-	(1)	-	(—)	3.8	(3)
2. Biloxi, Miss.	3.1	(1)	-	(—)	-	(—)	-	(—)	1.3	(1)
3. New Orleans, La.	6.3	(2)	9.1	(3)	-	(—)	-	(—)	6.4	(5)
4. Morgan City, La.	25.0	(8)	30.3	(10)	-	(4)	-	(3)	32.1	(25)
5. Galveston, Texas	18.7	(6)	18.2	(6)	-	(2)	-	(—)	17.9	(14)
6. Corpus Christi, Texas	15.6	(5)	18.2	(6)	-	(1)	-	(—)	15.4	(12)
7. Brownsville, Texas	25.0	(8)	24.2	(8)	-	(1)	-	(1)	23.1	(18)
Total reporting	100.0	(32)	100.0	(33)	-	(9)	-	(4)	100.0	(78)
III. California										
1. San Diego, Calif.	40.5	(17)	42.9	(18)	-	(3)	-	(1)	40.6	(39)
2. Los Angeles. Calif.	50.0	(21)	47.6	(20)	-	(—)	-	(7)	50.0	(48)
3. San Francisco, Calif.	9.5	(4)	7.1	(3)	-	(—)	-	(1)	8.3	(8)
4. Eureka, Calif.	-	(—)	2.4	(1)	-	(—)	-	(—)	1.1	(1)
Total reporting	100.0	(42)	100.0	(42)	-	(3)	-	(9)	110.0	(96)

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a/Fifty per cent of active wood vessels with no or smallest paid losses per policy year studied.
b/Fifty per cent of active wood vessels with largest paid losses per policy year studied.

TABLE A-47
LENGTH OF FISHING PERIOD OF VESSELS CLASSIFIED ON THE BASIS OF PAID LOSS RECORD UNDER HULL INSURANCE a/

Area - Fishing period during 1950-55 (in months)	Active wood vessels				Active steel vessels		Lost wood vessels		Total in sample	
	With best loss record b/		With worst loss record c/							
	Percent	No.	Percent	No.	Percent	No.	Percent	No.	Percent	No.
I. New England										
1. One to six	-	(5)	-	(—)	-	(2)	-	(2)	100.0	(9)
2. Seven to ten	53.7	(108)	28.9	(58)	7.0	(14)	10.4	(21)	100.0	(201)
3. Eleven to twelve	36.1	(181)	50.9	(255)	9.6	(48)	3.4	(17)	100.0	(501)
Total reporting	41.4	(294)	44.0	(313)	9.0	(64)	5.6	(40)	100.0	(711)
II. Gulf Area										
1. One to six	57.7	(45)	14.1	(11)	26.9	(21)	1.3	(1)	100.0	(78)
2. Seven to ten	37.0	(27)	53.4	(39)	8.2	(6)	1.4	(1)	100.0	(73)
3. Eleven to twelve	38.4	(104)	50.5	(137)	7.4	(20)	3.7	(10)	100.0	(271)
Total reporting	41.7	(176)	44.3	(187)	11.1	(47)	2.8	(12)	100.0	(422)
III. California										
1. One to six	58.9	(102)	38.2	(66)	2.3	(4)	.6	(1)	100.0	(173)
2. Seven to ten	37.0	(107)	52.6	(152)	4.5	(13)	5.9	(17)	100.0	(289)
3. Eleven to twelve	46.4	(32)	39.1	(27)	-	(—)	14.5	(10)	100.0	(69)
Total reporting	45.4	(241)	46.1	(245)	3.2	(17)	5.3	(28)	100.0	(531)

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a/ Based on sum of yearly responses for 1950-55.

b/ Fifty per cent of active wood vessels with no or smallest paid losses per policy year studied.

c/ Fifty per cent of active wood vessels with largest paid losses per policy year studied.

TABLE A-48
MAJOR TYPES OF FISHING GEAR OF VESSELS CLASSIFIED ON THE BASIS OF PAID LOSS RECORD UNDER HULL INSURANCE [a]

Area - Major types of fishing gear during 1950-55	Active wood vessels				Active steel vessels		Lost wood vessel		Total in sample	
	With best loss record[b]		With worst loss record[c]							
	Percent	No.	Percent	No.	Percent	No.	Percent	No.	Percent	No.
I. New England										
1. Trawls (otter)	42.8	(332)	41.5	(225)	9.6	(52)	6.1	(33)	100.0	(542)
2. Dredges	27.3	(30)	72.7	(80)	-	(—)	-	(—)	100.0	(110)
3. Other[d]	64.2	(43)	8.9	(6)	18.0	(12)	8.9	(6)	100.0	(67)
Total reporting	42.4	(305)	43.3	(311)	8.9	(64)	554	(39)	100.0	(719)
II. Gulf Area										
1. Trawls (mostly shrimp)	44.0	(158)	45.4	(163)	7.2	(26)	3.3	(12)	100.0	(359)
2. Other[e]	28.6	(18)	38.1	(24)	33.3	(21)	-	(—)	100.0	(63)
Total reporting	41.7	(176)	44.3	(187)	11.2	(47)	2.8	(12)	100.0	(422)
III. California										
1. Hook & line	54.4	(141)	39.0	(101)	2.7	(7)	3.9	(10)	100.0	(259)
2. Purse seines	38.0	(62)	55.2	(90)	-	(—)	6.8	(11)	100.0	(163)
3. Other[f]	38.7	(36)	58.1	(54)	-	(—)	3.2	(3)	100.0	(93)
Total reporting	46.4	(239)	47.6	(245)	1.4	(7)	4.6	(24)	100.0	(515)

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a/ Based on sum of yearly responses for 1950-55.

b/ Fifty per cent of active wood vessels with no or smallest paid losses per policy year studied.

c/ Fifty per cent of active wood vessels with largest paid losses per policy year studied.

d/ Stop nets 51, traps 2, gill nets 8, purse seines 6.

e/ Hook and line 30, dredges 12, purse seines 21.

f/ Stop nets 60, traps (crab) 6, trawls 21, gill nets 6.

TABLE A-49
MAJOR FISHING GROUNDS OF VESSELS CLASSIFIED ON THE BASIS OF PAID LOSS RECORD UNDER HULL INSURANCE[a]

Area-- Major fishing grounds during 1950-55	Active wood vessels				Active steel vessels		Lost wood vessels		Total in sample	
	With best loss record[b]		With worst loss record[c]							
	Percent	No.	Percent	No.	Percent	No.	Percent	No.	Percent	No.
I. New England										
1. New England coast	41.5	(242)	42.4	(247)	10.0	(58)	6.1	(36)	100.0	(583)
2. Middle Atlantic coast	58.4	(52)	37.1	(33)	-	(—)	4.5	(4)	100.0	(89)
3. Canada (Grand Banks--Nova Scotia)	21.7	(10)	65.2	(30)	13.1	(6)	-	(—)	100.0	(46)
Total reporting	42.3	(304)	43.2	(310)	8.9	(64)	5.6	(40)	100.0	(718)
II. Gulf Area										
1. Gulf Area (north)	37.8	(121)	47.5	(152)	11.9	(38)	2.8	(9)	100.0	(320)
2. Gulf Area (south)	57.3	(55)	30.2	(29)	9.4	(9)	3.1	(3)	100.0	(96)
Total reporting	42.3	(176)	43.5	(181)	11.3	(47)	2.9	(12)	100.0	(416)
III. California										
1. California and West Coast of Mexico	47.5	(194)	47.3	(193)	-	(—)	5.1	(21)	100.0	(408)
2. Central and South America	40.2	(51)	40.9	(52)	13.4	(17)	5.5	(7)	100.0	(127)
Total reporting	45.8	(245)	45.8	(245)	3.2	(17)	5.2	(28)	100.0	(535)

a/Based on sum of yearly responses for 1950-55.
b/Fifty per cent of active wood vessels with no or smallest paid losses per policy year studied.
c/Fifty per cent of active wood vessels with largest paid losses per policy year studied.

TABLE A-50
MAJOR KINDS OF FISH CAUGHT BY VESSELS CLASSIFIED ON THE BASIS OF PAID LOSS RECORD UNDER HULL INSURANCE[a]

Area - Major kind of fish caught during 1950-55	Active wood vessels With best loss record[b] Percent	No.	Active wood vessels With worst loss record[c] Percent	No.	Active steel vessels Percent	No.	Lost wood vessels Percent	No.	Total in sample Percent	No.
I. **New England**										
1. Cod, haddock	24.8	(56)	43.8	(99)	26.1	(59)	5.3	(12)	100.0	(226)
2. Flounders	58.7	(78)	34.6	(46)	-	(—)	6.7	(9)	100.0	(133)
3. Whiting	72.9	(70)	18.8	(18)	-	(—)	8.3	(8)	100.0	(96)
4. Scallops	21.2	(22)	78.8	(82)	-	(—)	-	(—)	100.0	(104)
5. Other[d]	48.2	(54)	37.5	(42)	4.5	(5)	9.8	(11)	100.0	(112)
Total reporting	41.7	(280)	42.8	(287)	9.5	(64)	6.0	(40)	100.0	(671)
II. **Gulf Area**										
1. Shrimp[e]	44.0	(158)	45.4	(163)	7.2	(26)	3.4	(12)	100.0	(359)
2. Other	28.6	(18)	38.1	(24)	33.3	(21)	-	(—)	100.0	(63)
Total reporting	41.7	(176)	44.3	(187)	11.1	(47)	2.9	(12)	100.0	(422)
III. **California**										
1. Tuna	41.3	(135)	48.0	(157)	5.2	(17)	5.5	(18)	100.0	(327)
2. Albacore	59.2	(29)	40.8	(20)	-	(—)	-	(—)	100.0	(49)
3. Mackerel	57.7	(30)	42.3	(22)	-	(—)	-	(—)	100.0	(52)
4. Other[f]	48.2	(52)	42.6	(46)	-	(—)	9.2	(10)	100.0	(108)
Total reporting	45.9	(246)	45.7	(245)	3.2	(17)	5.2	(28)	100.0	(536)

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[a] Based on sum of yearly responses for 1950-55.

[b] Fifty per cent of active wood vessels with no or smallest paid losses per policy year studied.

[c] Fifty per cent of active wood vessels with largest paid losses per policy year studied.

[d] Ocean perch 65, scup or porgy 15, mackerel 21, clams 6, menhaden 5.

[e] Oysters 12, red snapper 30, menhaden 21.

[f] Pilchard 31, sea bass 16, anchovies 10, rock cod 18, crabs 12, sea herring 12, salmon 9.

TABLE A-51
VESSELS FREE OF MORTGAGE OR OTHER FINANCIAL INDEBTEDNESS CLASSIFIED ON THE BASIS OF PAID LOSS RECORD UNDER HULL INSURANCE

Area - and vessel class	Vessels free of financial burdens		All vessels in sample	
	Percent	Number	Percent	Number
. New England				
1. Active wood with best loss record[a]	55.8	(29)	100.0	(52)
2. Active wood with worst loss record[b]	54.7	(29)	100.0	(53)
3. Active steel	-	(7)	-	(11)
4. Lost wood	-	(6)	-	(11)
Total reporting	55.9	(71)	100.0	(127)
I. Gulf Area				
1. Active wood with best loss record[a]	65.6	(21)	100.0	(32)
2. Active wood with worst loss record[b]	60.6	(20)	100.0	(33)
3. Active steel	-	(6)	-	(9)
4. Lost wood	-	(3)	-	(4)
Total reporting	64.1	(50)	100.0	(78)
III. California				
1. Active wood with best loss record[a]	78.6	(33)	100.0	(42)
2. Active wood with worst loss record[b]	69.0	(29)	100.0	(42)
3. Active steel	-	(3)	-	(3)
4. Lost wood	-	(4)	-	(9)
Total reporting	71.9	(69)	100.0	(96)

Fifty per cent of active wood vessels with no or smallest paid losses per policy year studied.

Fifty per cent of active wood vessels with largest paid losses per policy year studied.

TABLE A-52
FINANCIAL CHARACTERISTICS OF VESSELS CLASSIFIED ON THE BASIS OF PAID LOSS RECORD UNDER HULL INSURANCE

Area - and vessel class	Vessels with average value in thousand of dollars									
	Original cost		Purchase price		Replacement value		Market value		Amount of insurance	
	Value	Vessels	Value	Vessels	Value	Vessels	Value	Vessels	Value	Vessels
I. New England										
1. Active wood with best loss record[a]	43.2	(36)	33.6	(36)	60.3	(49)	24.5	(45)	27.4	(52)
2. Active wood with worst loss record[b]	61.0	(40)	50.6	(35)	111.1	(49)	52.0	(46)	52.2	(53)
3. Active steel	185.5	(10)	147.5	(2)	420.9	(11)	171.7	(6)	167.0	(11)
4. Lost wood	78.3	(3)	27.7	(9)	69.4	(9)	12.6	(5)	35.0	(11)
Total reporting	57.1	(89)	43.0	(82)	115.7	(118)	45.0	(102)	50.5	(127)
II. Gulf Area										
1. Active wood with best loss record[a]	26.5	(22)	22.0	(24)	30.8	(31)	20.4	(30)	17.1	(32)
2. Active wood with worst loss record[b]	23.1	(29)	23.8	(29)	34.2	(33)	20.8	(29)	17.6	(33)
3. Active steel	59.2	(9)	50.2	(5)	82.2	(9)	72.4	(9)	40.4	(9)
4. Lost wood	36.5	(4)	42.7	(3)	59.0	(4)	17.0	(1)	20.0	(4)
Total reporting	23.7	(64)	26.2	(61)	39.7	(77)	27.3	(69)	20.1	(78)
III. California										
1. Active wood with best loss record[a]	119.8	(30)	86.8	(27)	163.4	(40)	72.9	(36)	74.8	(42)
2. Active wood with worst loss record[b]	137.9	(31)	101.0	(20)	206.3	(42)	96.7	(32)	98.3	(42)
3. Active steel	431.7	(3)	-	(—)	536.7	(3)	376.7	(3)	367.9	(3)
4. Lost wood	92.7	(6)	74.8	(5)	117.5	(6)	97.0	(3)	154.7	(9)
Total reporting	138.8	(70)	91.0	(52)	192.4	(91)	96.5	(74)	101.7	(96)

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a/Fifty per cent of active wood vessels with no or smallest paid losses per policy year studied.

b/Fifty per cent of active wood vessels with largest paid losses per

TABLE A-53

LATENT DEFECTS IN HULL INSURANCE CONTRACTS OF VESSELS CLASSIFIED ON THE BASIS OF PAID LOSS RECORD

Area and vessel class	Full coverage		Excludes negligence on machinery		Total in sample	
	Percent	Policy years	Percent	Policy years	Percent	Policy years studied
I. New England						
1. Active wood with best loss record[a]	35.7	(61)	47.4	(81)	100.0	(171)
2. Active wood with worst loss record[b]	40.0	(86)	59.1	(127)	100.0	(215)
3. Active steel	87.8	(43)	10.2	(5)	100.0	(49)
4. Lost wood	32.3	(10)	58.1	(18)	100.0	(31)
Total reporting	43.4	(200)	49.1	(231)	100.0	(466)
II. Gulf Area						
1. Active wood with best loss record[b]	40.0	(32)	12.5	(10)	100.0	(80)
2. Active wood with worst loss record[b]	48.0	(49)	6.9	(7)	100.0	(102)
3. Active steel	48.6	(17)	-	(—)	100.0	(35)
4. Lost wood	-	(—)	-	(—)	-	(8)
Total reporting	43.6	(98)	7.6	(17)	100.0	(225)
III. California						
1. Active wood with best loss record[a]	95.7	(132)	(c)		100.0	(138)
2. Active wood with worst loss record[b]	96.9	(154)			100.0	(159)
3. Active steel	-	(8)			-	(13)
4. Lost wood	-	(24)			-	(24)
Total reporting	95.2	(318)			100.0	(334)

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[a] Fifty per cent of active wood vessels with no or smallest paid losses per policy year studied.

[b] Fifty per cent of active wood vessels with largest paid losses per policy year studied.

[c] No contracts with this provision in the California sample.

TABLE A-54
HULL INSURANCE CONTRACTS WITH FRANCHISE AND/OR DEDUCTIBLE CLAUSES OF VESSELS CLASSIFIED ON THE BASIS OF PAID LOSS RECORD

Area and vessel class	Contracts with franchise		Contracts with deductible		Total in sample	
	Percent	Policy years	Percent	Policy years	Percent	Po ye stud
I. New England						
1. Active wood with best loss record	45.6	(78)	52.1	(89)	100.0	(17
2. Active wood with worst loss record[b]	61.0	(131)	59.5	(128)	100.0	(21
3. Active steel	73.5	(36)	16.3	(8)	100.0	(49
4. Lost wood	48.4	(15)	58.1	(18)	100.0	(3
Total reporting	55.8	(260)	52.2	(243)	100.0	(46)
II. Gulf Area						
1. Active wood with best loss record[a]	(c)		90.0	(72)	100.0	(8)
2. Active wood with worst loss record[b]			99.0	(101)	100.0	(10
3. Active steel			100.0	(35)	100.0	(3
4. Lost wood			-	(8)	-	(8
Total reporting			96.0	(216)	100.0	(22
III. California						
1. Active wood with best loss record[a]	55.8	(77)	71.0	(98)	100.0	(13
2. Active wood with worst loss record[b]	77.4	(123)	58.5	(93)	100.0	(15
3. Active steel	-	(13)	-	(—)	-	(13
4. Lost wood	-	(18)	-	(11)	-	(24
Total reporting	69.2	(231)	60.5	(202)	100.0	(334

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[a] Fifty per cent of active wood vessels with no or smallest paid losses per polic year.

[b] Fifty per cent of active wood with largest paid losses per policy year studied.

[c] No contracts with franchise clause in the Gulf Area.

TABLE A-55
FRANCHISE CLAUSES IN HULL INSURANCE CONTRACTS OF VESSELS CLASSIFIED ON THE BASIS OF PAID LOSS RECORD

Area and vessel class	Franchise applies to all claims except collision			Total in sample	
		Policy years	Aver. amount		Policy
	Percent	Number	Dollars	Percent	years
New England					
1. Active wood with best loss record[a]	45.0	(77)	$ 500	100.0	(171)
2. Active wood with worst loss record[b]	60.0	(129)	523	100.0	(215)
3. Active steel	73.5	(36)	128	100.0	(49)
4. Lost wood	35.5	(11)	500	100.0	(31)
Total reporting	54.3	(253)	617	100.0	(466)
I. Gulf Area					
1. Active wood with best loss record[a]	(c)		(c)	(c)	
2. Active wood with worst loss record[b]					
3. Active steel					
4. Lost wood					
Total reporting					
II. California					
1. Active wood with best loss record[a]	55.8	(77)	$2,026	100.0	(138)
2. Active wood with worst loss record[b]	74.8	(119)	2,213	100.0	(159)
3. Active steel	-	(13)	3,000	-	(13)
4. Lost wood	-	(19)	3,420	100.0	(24)
Total reporting	68.3	(228)	2,295	100.0	(334)

Fifty per cent of active wood vessels with no or smallest paid losses per policy year studied.

Fifty per cent of active wood vessels with largest paid losses per policy year studied.

No contracts with franchise clause in the Gulf Area sample.

TABLE A-56

DEDUCTIBLE AVERAGES APPLIED TO ALL CLAIMS IN HULL INSURANCE CONTRACTS OF VESSELS CLASSIFIED ON THE BASIS OF PAID LOSS RECORD

Area and vessel class	Deductible applies to all claims of whatsoever nature			Total in sampl	
	Policy years		Aver. amount		
	Percent	Number	Dollars	Percent	Poli yea stud
I. New England					
1. Active wood with best loss record[a]	7.0	(12)	$250	100.0	(171
2. Active wood with worst loss record[b]	8.8	(19)	276	100.0	(215
3. Active steel	4.1	(2)	500	100.0	(49
4. Lost wood	9.7	(3)	250	100.0	(31
Total reporting	7.7	(36)	278	100.0	(466
II. Gulf Area					
1. Active wood with best loss record[a]	63.8	(51)	$444	100.0	(80
2. Active wood with worst loss record[b]	75.5	(77)	409	100.0	(102
3. Active steel	94.3	(33)	424	100.0	(35
4. Lost wood	-	(3)	233	-	(8
Total reporting	72.9	(164)	420	100.0	(225
III. California					
1. Active wood with best loss record[a]	26.8	(37)	$345	100.0	(138
2. Active wood with worst loss record[b]	17.0	(27)	276	100.0	(159
3. Active steel	-	(—)	—	-	(13
4. Lost wood	-	(—)	—	-	(24
Total reporting	19.2	(64)	316	100.0	(334

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a/Fifty per cent of active vessels with no or smallest paid losses per policy yea studied.

b/Fifty per cent of active vessels with largest paid losses per policy year studi

TABLE A-57

DEDUCTIBLE AVERAGES WITH EXCEPTIONS IN HULL INSURANCE CONTRACTS OF VESSELS CLASSIFIED ON THE BASIS OF PAID LOSS RECORD

Area - and vessel class	Applies to all claims except collision			Applies to all claims except sue and labor and collision			Total in sample	
	Policy years		Aver. amount	Policy years		Aver. amount		
	Percent	No.	Dollars	Percent	No.	Dollars	Percent	Policy years
I. New England								
1. Active wood with best loss record[a]	17.5	(30)	$ 292	28.1	(48)	$250	100.0	(171)
2. Active wood with worst loss record[b]	16.3	(35)	353	34.9	(75)	307	100.0	(215)
3. Active steel	12.2	(6)	250	-	(-)	-	100.0	(49)
4. Lost wood	22.6	(7)	893	25.8	(8)	281	100.0	(31)
Total reporting	16.7	(70)	371	28.1	(131)	286	100.0	(466)
II. Gulf Area								
1. Active wood with best loss record[a]	26.3	(21)	$ 323	(c)		(c)	100.0	(80)
2. Active wood with worst loss record[b]	23.5	(24)	428				100.0	(102)
3. Active steel	5.7	(2)	1,000				100.0	(35)
4. Lost wood	-	(5)	180				-	(8)
Total reporting	23.1	(52)	384				100.0	(225)
III. California								
1. Active wood with best loss record[a]	8.7	(12)	$ 480	37.0	(51)	$488	100.0	(138)
2. Active wood with worst loss record[b]	7.5	(12)	495	34.0	(54)	446	100.0	(159)
3. Active steel	-	(—)	-	-	(—)	-	-	(13)
4. Lost wood	-	(6)	2,567	-	(5)	430	-	(24)
Total reporting	9.0	(30)	903	33.0	(110)	464	100.0	(334)

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[a] Fifty per cent of active wood vessels with no or smallest paid losses per policy year studied.

[b] Fifty per cent of active wood vessels with largest paid losses per policy year studied.

[c] No contracts with such provision in the Gulf Area sample.

TABLE A-58
EXCLUSIONS ON LOSS OF EQUIPMENT IN HULL INSURANCE CONTRACTS OF VESSELS CLASSIFIED ON THE BASIS OF PAID LOSS RECORD

Area and vessel class	Fishing gear, nets, and tackle are covered only when under the deck[a] (except in total loss of vessel)		Total in sample	
	Percent	Policy years	Percent	Policy years
I. New England				
1. Active wood with best loss record[b]	74.9	(128)	100.0	(171)
2. Active wood with worst loss record[c]	76.7	(165)	100.0	(215)
3. Active steel	73.5	(36)	100.0	(49)
4. Lost wood	88.5	(23)	100.0	(31)
Total reporting	75.5	(352)	100.0	(466)
II. Gulf Area				
1. Active wood with best loss record[b]	48.8	(39)	100.0	(80)
2. Active wood with worst loss record[c]	70.0	(71)	100.0	(102)
3. Active steel	37.1	(13)	100.0	(35)
4. Lost wood	-	(5)	100.0	(8)
Total reporting	56.9	(128)	100.0	(225)
III. California				
1. Active wood with best loss record[b]	90.6	(125)	100.0	(138)
2. Active wood with worst loss record[c]	86.2	(137)	100.0	(159)
3. Active steel	-	(3)	-	(13)
4. Lost wood	-	(24)	-	(24)
Total reporting	86.5	(289)	100.0	(334)

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a/ This exclusion applies to the New England sample only. The Gulf Area sample refers to the exclusion: "Fishing gear, nets, and tackle are covered only"; and the California sample refers to the exclusion: "Fishing gear, nets, tackle, cables, and anchors are not covered when lost or sacrificed on fishing grounds."

b/ Fifty percent of active wood vessels with no or smallest paid losses per policy year studied.

c/ Fifty percent of active wood vessels with largest paid losses per policy year studied.

OF VESSELS CLASSIFIED ON THE BASIS OF PAID LOSS RECORD
UNDER HULL INSURANCE

Area - Item	Active wood vessels: With best loss record[a]	Active wood vessels: With worst loss record[b]	Active steel vessels	Lost wood vessels	All vessels in sample
I. New England					
1. Insurance amount	$4,924,000	$10,655,000	$8,018,000	$1,084,000	$24,681,000
2. Gross premium	290,207	547,466	220,038	67,306	1,125,017
3. Net premium	273,147	536,294	205,876	62,259	1,077,576
4. Gross premium ÷ insurance amount ratio	(5.89)	(5.14)	(2.75)	(6.21)	(4.56)
5. Net premium ÷ insurance amount ratio	(5.55)	(5.03)	(2.57)	(5.74)	(4.37)
Policy years studied	(180)	(204)	(48)	(31)	(463)
II. Gulf Area					
1. Insurance amount	$1,403,000	$1,798,000	$1,415,000	$160,000	$4,776,000
2. Gross premium	89,426	98,606	53,776	10,377	252,185
3. Net premium	84,991	96,532	53,647	10,183	245,353
4. Gross premium ÷ insurance amount ratio	(6.37)	(5.48)	(3.80)	(6.49)	(5.28)
5. Net premium ÷ insurance amount ratio	(6.06)	(5.37)	(3.79)	(6.36)	(5.14)
Policy years studied	(82)	(102)	(35)	(8)	(227)
III. California					
1. Insurance amount	$10,471,000	$15,433,000	$4,774,000	$3,712,000	$34,390,000
2. Gross premium	702,430	1,013,995	203,765	268,013	2,188,203
3. Net premium	649,616	941,004	175,138	257,078	2,022,836
4. Gross premium ÷ insurance amount ratio	(6.71)	(6.57)	(4.27)	(7.22)	(6.36)
5. Net premium ÷ insurance amount ratio	(6.20)	(6.10)	(3.67)	(6.93)	(5.88)
Policy years studied	(140)	(157)	(13)	(24)	(334)

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[a] Fifty per cent of active wood vessels with no or smallest paid losses per policy year studied.
[b] Fifty per cent of active wood vessels with largest paid losses per policy year studied.

TABLE A-60
CLAIM EXPENSES PAID AND PAID LOSS & EXPENSE--NET PREMIUM RATIO FOR VESSELS CLASSIFIED ON THE BASIS OF PAID LOSSES RECORD UNDER HULL INSURANCE

Item	Active Wood Vessels With best loss record[a]	Active Wood Vessels With worst loss record[b]	Active Steel Vessels	Lost Wood Vessels	All vessels in sample
I. New England					
1. Net premium	$273,147	$536,294	$205,876	$62,259	$1,077,576
2. Paid losses	16,174	364,355	29,877	270,400	680,806
3. Claim expenses paid	2,443	24,353	510	2,133	29,439
4. Paid losses & expenses	18,617	388,708	30,387	272,533	710,245
5. Loss and expense - net premium ratio	(6.82)	(72.48)	(14.76)	(437.74)	(65.91)
Policy years studied	(180)	(204)	(48)	(31)	(463)
II. Gulf Area					
1. Net premium	$89,991	$96,532	$53,647	$10,183	$245,353
2. Paid losses	-	40,881	38,371	85,000	164,252
3. Claim expenses paid	-	2,233	1,284	1,545	5,062
4. Paid losses & expenses	-	43,114	39,655	86,545	169,314
5. Loss & expense - net premium ratio	-	(44.66)	(73.94)	(849.90)	(69.00)
Policy years studied	(82)	(102)	(35)	(8)	(227)
III. California					
1. Net premium	$649,616	$941,004	$175,138	$257,078	$2,022,836
2. Paid losses	3,166	200,619	55,049	617,031	875,865
3. Claim expenses paid	587	13,327	1,055	6,950	21,919
4. Paid losses & expenses	3,753	213,946	56,104	623,981	897,784
5. Loss & expense - net premium ratio	(.58)	(22.74)	(32.03)	(242.72)	(44.38)
Total number	(140)	(157)	(13)	(24)	(33.4)

[a] Fifty per cent of active wood vessels with no or smallest paid losses per policy year studied.

[b] Fifty per cent of active wood vessels with largest paid losses per policy year studied.

TOTAL GROSS, RETURNED, AND NET
PREMIUMS, TOTAL PAID LOSSES, CLAIM EXPENSES PAID
AND LOSS PLUS CLAIM EXPENSES--NET PREMIUM RATIOS FOR HULL INSURANCE
1950-1954

	POLICY YEARS					
	1950-51	1951-52	1952-53	1953-54	1954-55	Total 1950-54
I. New England						
1. Gross premium	$189,291	$205,519	$221,348	$260,658	$248,201	$1,125,017
2. Returned premium	8,982	10,165	3,516	12,028	12,750	47,441
3. Net premium	180,309	195,354	217,832	248,630	235,451	1,077,576
4. Paid losses	31,010	79,297	99,097	310,006	161,396	680,805
5. Claim expenses paid	1,896	2,478	2,292	19,727	3,046	29,439
6. Paid losses and expenses	32,906	81,775	101,389	329,733	164,442	710,245
7. Loss - net premium ratio (Rows 6 ÷ 3)	(18.2)	(41.9)	(46.5)	(132.6)	(69.8)	(65.9)
8. Policy years studied	(86)	(93)	(101)	(99)	(89)	(468)
II. Gulf Area						
1. Gross premium	$25,195	$44,730	$50,936	$58,273	$73,051	$252,185
2. Returned premium	1,102	2,797	1,857	327	749	6,832
3. Net premium	24,093	41,933	49,079	57,946	72,302	245,353
4. Paid losses	3,294	71,696	19,306	9,718	60,238	164,252
5. Claim expenses paid	145	1,729	760	512	1,916	5,062
6. Paid losses & expenses	3,439	73,425	20,066	10,230	62,154	169,314
7. Loss - net premium ratio (Rows 6 ÷ 3)	(14.3)	(175.1)	(40.9)	(17.7)	(86.0)	(69.0)
8. Policy years studied	(25)	(44)	(45)	(53)	(60)	(227)
III. California						
1. Gross premium	$388,202	$397,709	$584,509	$409,799	$407,984	$2,188,203
2. Returned premium	26,398	41,674	29,329	26,932	41,034	165,367
3. Net premium	361,804	356,035	555,180	382,867	366,950	2,022,836
4. Paid losses	295,693	100,254	121,756	104,673	253,489	875,865
5. Claim expenses paid	8,379	2,252	4,599	2,470	4,219	21,919
6. Paid losses & expenses	304,072	102,506	126,355	107,143	257,708	897,784
7. Loss - net premium ratio (Rows 6 ÷ 3)	(84.0)	(28.8)	(22.8)	(28.0)	(70.2)	(44.4)
8. Policy years studied	(61)	(65)	(73)	(71)	(68)	(338)

TABLE A 62

TOTAL GROSS, RETURNED, AND NET PREMIUMS, TOTAL PAID LOSSES, CLAIM EXPENSES PAID, AND LOSS PLUS CLAIM EXPENSES - NET PREMIUM RATIOS FOR PROTECTION INDEMNITY INSURANCE, 1950 - 1954

	POLICY YEAR					Total
	1950-51	1951-52	1952-53	1953-54	1954-55	1950-54
I. New England						
1. Gross premium	$110,261	$112,030	$140,505	$192,783	$236,466	$792,045
2. Returned premium	3,123	3,932	2,144	7,587	7,554	24,340
3. Net premium	107,138	108,098	138,361	185,196	228,912	767,705
4. Paid losses	102,809	202,864	98,150	115,854	38,890	558,567
5. Claim expenses paid	18,567	30,752	17,863	13,175	5,014	85,371
6. Paid losses and expenses	121,376	233,616	116,013	129,029	43,904	643,938
7. Loss-premium ratio (Rows 6 ÷ 3)	(113.3)	(216.1)	(83.8)	(69.7)	(19.2)	(83.9)
8. Policy years studied	(79)	(86)	(88)	(100)	(92)	(445)
II. Gulf Area						
1. Gross premium	$1,308	$2,870	$5,025	$5,306	$6,059	$20,568
2. Returned premium	922	-	125	-	-	1,047
3. Net premium	386	2,870	4,900	5,306	6,059	19,521
4. Paid losses	-	-	-	-	-	-
5. Claim expenses paid	-	-	-	-	-	-
6. Paid losses and expenses	-	-	-	-	-	-
7. Loss-premium ratio (Rows 6 ÷ 3)	(0)	(0)	(0)	(0)	(0)	(0)
8. Policy years studied	(3)	(8)	(6)	(10)	(12)	(39)
III. California						
1. Gross premiums	$21,550	$27,944	$32,370	$41,545	$38,737	$162,146
2. Returned premium	762	1,778	1,120	3,118	3,066	9,844
3. Net premiums	$20,788	$26,166	$31,250	$38,427	$35,671	$152,302
4. Paid losses	58,769	38,347	47,736	16,622	33,607	195,081
5. Claim expenses paid	11,447	4,911	7,829	2,495	4,882	31,564
6. Paid losses & expenses	70,216	43,258	55,565	19,117	38,489	226,645
7. Loss - premium ratio (Rows 6 ÷ 3)	(337.8)	(165.3)	(177.8)	(49.7)	(107.9)	(148.8)
8. Policy years studied	(57)	(70)	(69)	(61)	(54)	(311)

TABLE A -

AMOUNT OF INSURANCE, REPLACEMENT COST, AND MARKET VALUE OF VESSELS CARRYING HULL INSURANCE

Area - vessel - category	Totals (thousand dollars)			Number of vessels reporting[a] (1)	Averages (thousand dollars)			Amount of insurance as percent of:	
	Insurance amount (1)	Replacement cost (2)	Market value (3)		Insurance amount (2)	Replace. cost (3)	Market value (1)	Replace. cost (2)	Market value (3)
I. New England									
1. Insurance amount larger than market value	$1,989.7	$3,893.0	$1,408.0	(44)	45.2	92.7	32.0	48.8	141.3
2. Insurance amount equal to market value	683.0	1,520.0	683.0	(13)	52.5	116.9	52.5	44.9	100.0
3. Insurance amount smaller than market value	2,048.0	4,305.0	2,487.0	(44)	46.6	97.8	56.5	47.6	82.5
4. Total reporting	4,720.7	9,718.0	4,578.0	(101)	46.7	98.2	45.3	47.9	103.1
II. Gulf Area									
1. Insurance amount larger than market value	392.5	594.0	323.0	(16)	24.5	37.1	20.2	66.0	121.3
2. Insurance amount equal to market value	242.0	419.0	242.0	(13)	18.6	32.2	18.6	57.8	100.0
3. Insurance amount smaller than market value	878.2	1,689.0	1,318.0	(40)	22.0	42.2	33.0	52.1	66.7
4. Total reporting	1,512.7	2,702.0	1,883.0	(69)	21.9	39.2	27.3	56.0	80.3
III. California									
1. Insurance amount larger than market value	6,334.5	9,800.0	4,401.0	(55)	115.2	181.5	80.1	63.5	137.6
2. Insurance amount equal to market value	70.0	170.0	70.0	(3)	23.3	56.7	23.3	41.1	100.0
3. Insurance amount smaller than market value	2,069.8	3,915.0	2,667.0	(16)	129.4	261.0	166.7	49.6	77.6
4. Total reporting	8,474.3	13,885.0	7,138.0	(74)	114.5	192.8	95.5	59.2	118.7

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[a] Vessels reporting refer to both replacement cost and market value with the following exceptions: 42 vessels in New England and 54 in California in rows 1; and 15 in California in row 3 reported replacement cost only. Proper adjustments were made in the computation of ratios.

TABLE A-64
VESSELS WITH AMOUNT OF INSURANCE LARGER THAN MARKET VALUE CLASSIFIED ON THE BASIS OF PAID LOSS RECORD UNDER HULL INSURANCE

Area - vessel class	Totals (thousand dollars)		Number of vessels reporting	Averages (thous. dllr.)		Insurance amount as % of mkt. value
	Insurance amount	Market value		Insurance amount	Market value	
I. New England						
1. Active wood with best loss record[a]	$551.3	$350.0	(22)	$25.1	$15.9	157.9
2. Active wood with worst loss record[b]	973.4	755.0	(16)	60.8	47.2	128.8
3. Active steel	350.0	240.0	(2)	175.0	120.0	145.8
4. Lost wood	115.0	63.0	(4)	28.8	15.8	182.3
Total reporting	$1,989.7	$1,408.0	(44)	$45.2	$32.0	141.3
II. Gulf Area						
1. Active wood with best loss record[a]	$194.5	$161.0	(8)	$24.3	$20.1	120.9
2. Active wood with worst loss record[b]	113.0	85.0	(6)	18.8	14.2	132.4
3. Active steel	85.0	77.0	(2)	42.5	38.5	110.4
4. Lost Wood	-	-	(0)	-	-	-
Total reporting	$392.5	$323.0	(16)	$24.5	$20.2	121.3
III. California						
1. Active wood with best loss record[a]	$2,329.9	$1,653.0	(27)	$86.3	$61.2	141.0
2. Active wood with worst loss record[b]	3,587.8	2,427.0	(25)	143.5	97.1	147.8
3. Active steel	306.8	280.0	(1)	306.8	280.0	109.6
4. Lost wood	110.0	41.0	(2)	55.0	20.5	268.3
Total reporting	$6,334.5	$4,401.0	(55)	$115.2	$80.0	144.0

[a] Fifty per cent of active wood vessels with no or smallest paid losses per policy year studied.

[b] Fifty per cent of active wood vessels with largest paid losses per policy year studied.

TABLE A-65

ANNUAL DOLLAR VALUE OF FISH AND SHELLFISH LANDINGS, AVERAGE AMOUNT OF PAID LOSSES PER POLICY YEAR STUDIED FOR HULL AND PROTECTION AND INDEMNITY INSURANCE, AND NUMBER OF VESSELS LOST DURING 1949-55

Area--Item	1949	1950	1951	1952	1953	1954	1955
I. New England							
1. Value of landings (million dollars)	58.5	60.6	67.4	67.3	60.1	57.6	57.2
2. Hull losses per policy year (dollars)[a]	-	366	937	964	3,177	1,802	-
3. P & I losses per policy year (dollars)[a]	-	1,312	2,495	1,340	1,074	514	-
4. Number of vessels lost[c]	24	12	13	12	25	27	17
II. Gulf Area							
1. Value of landings (million dollars)	49.7	50.4	63.6	68.2	85.2	72.6	78.6
2. Hull losses per policy year (dollars)[a]	-	147	1,621	423	249	1,005	-
3. P & I losses per policy year (dollars)[b]	-	-	-	-	-	-	-
4. Number of vessels lost[c]	18	27	36	20	37	58	52
III. California							
1. Value of landings (million dollars)	72.5	81.6	66.6	65.8	59.4	67.4	53.2
2. Hull losses per policy year (dollars)[a]	-	4,937	1,542	1,552	1,468	3,759	-
3. P & I losses per policy year (dollars)[a]	-	1,013	540	1,047	268	111	-
4. Number of vessels lost[c]	23	34	28	48	21	27	18

[a] Years 1949 and 1955 were not studied.

[b] No P & I losses.

[c] Represents total number of vessels which were lost from the vessel population of each area.

Source: a) For dollar value of landings Fishery Statistics of the United States 1949-55, Fish and Wildlife Service, United States Department of the Interior.

b) For vessel losses Merchant Vessels of the United States 1949-56, Bureau of Customs, United States Treasury Department.

TABLE A-66
CLASSIFICATION OF VESSELS
ON THE BASIS OF PAID LOSS RECORD UNDER PROTECTION AND INDEMNITY INSURANCE

Area Class of vessels according to paid loss record	Number of vessels in each class	Total losses 1950-54 Percent	Total losses 1950-54 Thousand dollars	Number of claims	Loss per claim	Policy years studied	Losses per policy year studied
I. New England							
1. Vessels with best loss record [a]	(68)	9.0	$ 5,016	(73)	$ 69	(186)	$ 27
2. Vessels with worst loss record [b]	(69)	91.0	553,551	(640)	865	(259)	2,137
Total in sample	(137)	100.0	558,567	(713)	783	(445)	1,255
II. Gulf Area [c]	(17)	-	-	-	-	(39)	-
III. California							
1. Vessels with best loss record [a]	(43)	-	-	-	-	(170)	-
2. Vessels with worst loss record [b]	(43)	100.0	$195,081	(47)	$4,150	(141)	$1,384
Total in sample	(86)	100.0	195,081	(47)	4,150	(311)	627

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[a] Fifty per cent of vessels with no or smallest paid losses per policy year studied.
[b] Fifty per cent of vessels with largest paid losses per policy year studied.
[c] No paid losses

TABLE A-67
PORT OF REGISTRATION (HOME PORT) OF VESSELS CLASSIFIED ON THE BASIS OF PAID LOSS RECORD UNDER PROTECTION AND INDEMNITY INSURANCE

Area - Home port	Vessels with best loss record a/		Vessels with worst loss record b/		Total in sample	
	Percent	No.	Percent	No.	Percent	No.
I. New England						
1. Rockland, Maine	1.5	(1)	-	(—)	0.7	(1)
2. Portland, Maine	2.9	(2)	-	(—)	1.5	(2)
3. Gloucester, Mass.	39.7	(27)	29.0	(20)	34.3	(47)
4. Boston, Mass.	8.8	(6)	26.1	(18)	17.5	(24)
5. New Bedford, Mass.	25.0	(17)	43.5	(30)	34.3	(47)
6. Plymouth, Mass.	7.4	(5)	-	(—)	3.7	(5)
7. New London, Conn.	14.7	(10)	1.4	(1)	8.0	(11)
Total reporting	100.0	(68)	100.0	(69)	100.0	(137)
II. Gulf Area						
1. Tampa, Florida	-	(1)	-	(—)	-	(1)
2. Biloxi, Miss.	-	(—)	-	(—)	-	(—)
3. New Orleans, La.	-	(1)	-	(—)	-	(1)
4. Morgan City, La.	-	(1)	-	(—)	-	(1)
5. Galveston, Texas	-	(5)	-	(—)	-	(5)
6. Corpus Christie, Texas	-	(5)	-	(—)	-	(5)
7. Brownsville, Texas	-	(4)	-	(—)	-	(4)
Total reporting	-	(17)	-	(—)	-	(17)
III. California						
1. San Diego, Calif.	41.9	(18)	27.9	(12)	34.9	(30)
2. Los Angeles, Calif.	48.8	(21)	60.5	(26)	54.7	(47)
3. San Francisco, Calif.	7.0	(3)	11.6	(5)	9.3	(8)
4. Eureka, Calif.	2.3	(1)	-	(—)	1.1	(1)
Total reporting	100.0	(43)	100.0	(43)	100.0	(86)

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a/ Fifty per cent of vessels with no or smallest paid losses per policy year studied.

b/ Fifty per cent of vessels with largest paid losses per policy year studied.

TABLE A-68
AVERAGE AGE AND GROSS TONNAGE OF VESSELS CLASSIFIED ON THE BASIS OF PAID LOSS RECORD UNDER PROTECTION AND INDEMNITY INSURANCE

Area - Average age and gross tonnage	Vessels with best loss record[a]	Vessels with worst loss record[b]	All vessels in sample
I. New England			
1. Age (in years)	20.4	19.0	19.7
2. Gross tonnage	50.7	98.8	74.9
3. Registered size of crew[c]	5.6	9.6	7.7
4. Reported size of crew[d]	6.6	8.9	7.8
Vessels in sample	(68)	(69)	(137)
II. Gulf Area			
1. Age (in years)	8.7	-	8.7
2. Gross tonnage	49.5	-	49.5
3. Registered size of crew	3.7	-	3.7
4. Reported size of crew	3.1	-	3.1
Vessels in sample	(17)	(—)	(17)
III. California			
1. Age (in years)	16.0	15.0	15.5
2. Gross tonnage	144.5	143.8	144.1
3. Registered size of crew	10.8	8.7	9.8
4. Reported size of crew	8.6	7.2	7.9
Vessels in sample	(43)	(43)	(86)

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[a] Fifty per cent of vessels with no or smallest paid losses per policy year studie

[b] Fifty per cent of vessels with largest paid losses per policy year studied.

[c] Based on 63 vessels with best loss record and 67 vessels with worst loss record.

[d] Based on 44 best loss record and 50 worst loss record.

TABLE A-69

OWNER'S OCCUPATION

FOR VESSELS CLASSIFIED ON THE BASIS OF PAID LOSS RECORD UNDER PROTECTION AND INDEMNITY INSURANCE

Area - Owner's occupation	Vessels with best loss record[a]		Vessels with worst loss record[b]		All vessels in sample	
	Percent	No.	Percent	No.	Percent	No.
I. New England						
1. Captain-owner	67.2	(41)	32.8	(20)	100.0	(61)
2. Fish dealer or processor	-	(1)	-	(8)	100.0	(9)
3. Absentee owner	38.8	(26)	61.2	(41)	100.0	(67)
Total reporting	49.6	(68)	50.4	(69)	100.0	(137)
II. Gulf Area						
1. Captain-owner	-	(3)	-	(—)	100.0	(3)
2. Fish dealer or processor	-	(9)	-	(—)	100.0	(9)
3. Absentee owner	-	(5)	-	(—)	100.0	(5)
Total reporting	-	(17)	-	(—)	100.0	(17)
III. California						
1. Captain-owner	54.5	(24)	45.5	(20)	100 0	(44)
2. Fish dealer or processor	-	(—)	-	(—)	100.0	(—)
3. Absentee owner	45.2	(19)	54.8	(23)	100.0	(42)
Total reporting	50.0	(43)	50.0	(43)	100.0	(86)

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[a] Fifty per cent of vessels with no or smallest paid losses per policy year studied.

[b] Fifty per cent of vessels with largest paid losses per policy year studied.

TABLE A-70
OWNER'S OCCUPATIONAL ACTIVITY OTHER THAN BEING OR IN ADDITION TO BEING CAPTAIN-OWNER ETC., FOR VESSELS CLASSIFIED ON THE BASIS OF PAID LOSS RECORD UNDER PROTECTION AND INDEMNITY INSURANCE

Area - owner's other occupational activity	Vessels with best loss record[a]		Vessels with worst loss record[b]		All vessels in sample	
	Percent	No.	Percent	No.	Percent	No.
I. New England						
1. Owner with other activity	39.5	(15)	60.5	(23)	100.0	(38)
2. Owner with no other activity	54.2	(52)	45.8	(44)	100.0	(96)
Total reporting	50.0	(67)	50.0	(67)	100.0	(134)
II. Gulf Area						
1. Owner with other activity	-	(4)	-	(—)	100.0	(4)
2. Owner with no other activity	-	(12)	-	(—)	100.0	(12)
Total reporting	-	(16)	-	(—)	100.0	(16)
III. California						
1. Owner with other activity	-	(12)	-	(16)	100.0	(28)
2. Owner with no other activity	53.4	(31)	46.6	(27)	100.0	(58)
Total reporting	50.0	(43)	50.0	(43)	100.0	(86)

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[a] Fifty per cent of vessels with no or smallest paid losses per policy year studied

[b] Fifty per cent of vessels with largest paid losses per policy year studied.

TABLE A-71
CAPTAIN'S OWNERSHIP INTEREST IN VESSELS CLASSIFIED ON THE BASIS OF PAID LOSS RECORD UNDER PROTECTION AND INDEMNITY INSURANCE

Area - Captain's interest in vessels	Vessels with best loss record[a]		Vessels with worst loss record[b]		All vessels in sample	
	Percent	No.	Percent	No.	Percent	No.
I. New England						
1. Sole owner	59.0	(23)	41.0	(16)	100.0	(39)
2. Partner or stockholder	45.5	(25)	54.5	(30)	100.0	(55)
3. No interest	46.5	(20)	53.5	(23)	100.0	(43)
Total reporting	49.6	(68)	50.4	(69)	100.0	(137)
II. Gulf Area						
1. Sole owner	-	(5)	-	(—)	100.0	(5)
2. Partner or stockholder	-	(3)	-	(—)	100.0	(3)
3. No interest	-	(9)	-	(—)	100.0	(9)
Total reporting		(17)	- -	(—)	100.0	(17)
III. California						
1. Sole owner	-	(2)	-	(6)	100.0	(8)
2. Partner or stockholder	58.2	(39)	41.8	(28)	100.0	(67)
3. No interest	-	(2)	-	(9)	100.0	(11)
Total reporting	50.0	(43)	50.0	(43)	100.0	(86)

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[a] Fifty per cent of vessels with no or smallest paid losses per policy year studied.
[b] Fifty per cent of vessels with largest paid losses per policy year studied.

TABLE A-72

NUMBER OF VESSELS INTERVIEWED OWNER OWNS BY VESSELS CLASSIFIED ON THE BASIS OF PAID LOSS RECORD UNDER PROTECTION AND INDEMNITY INSURANCE

Area -- Number of vessels owned besides the one being interviewed	Vessels with best loss record[a] Percent	No.	Vessels with worst loss record[b] Percent	No.	All vessels in sample Percent	No.
I. New England						
1. None	60.7	(51)	39.3	(33)	100.0	(84)
2. One or more	32.1	(17)	67.9	(36)	100.0	(53)
Total reporting	49.6	(68)	50.4	(69)	100.0	(137)
II. Gulf Area						
1. None	-	(4)	-	(-)	100.0	(4)
2. One or more	-	(13)	-	(-)	100.0	(13)
Total reporting	-	(17)	-	(-)	100.0	(17)
III. California						
1. None	57.7	(30)	42.3	(22)	100.0	(52)
2. One or more	38.2	(13)	61.8	(21)	100.0	(34)
Total reporting	50.0	(43)	50.0	(43)	100.0	(86)

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[a] Fifty per cent of vessels with no or smallest paid losses per policy year studie

[b] Fifty per cent of vessels with largest paid losses per policy year studied.

TABLE A-73
IS THE VESSEL INCORPORATED (separately or together with other vessels) OR NOT? VESSELS CLASSIFIED ON THE BASIS OF PAID LOSS RECORD UNDER PROTECTION AND INDEMNITY INSURANCE

Area - Vessel is or is not incorporated	Vessels with best loss record[a]		Vessels with worst loss record[b]		All vessels in sample	
	Percent	No.	Percent	No.	Percent	No.
I. New England						
1. Vessel is incorporated	46.7	(21)	53.3	(24)	100.0	(45)
2. Vessel is not incorporated	52.2	(47)	47.8	(43)	100.0	(90)
Total reporting	50.4	(68)	49.6	(67)	100.0	(135)
II. Gulf Area						
1. Vessel is incorporated	-	(4)	-	(—)	100.0	(4)
2. Vessel is not incorporated	-	(13)	-	(—)	100.0	(13)
Total reporting	-	(17)	-	(—)	100.0	(17)
III. California						
1. Vessel is incorporated	-	(—)	-	(1)	100.0	(1)
2. Vessel is not incorporated	50.5	(43)	49.5	(42)	100.0	(85)
Total reporting	50.0	(43)	50.0	(43)	100.0	(86)

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[a] Fifty per cent of vessels with no or smallest paid losses per policy year studied.

[b] Fifty per cent of vessels with largest paid losses per policy year studied.

TABLE A-74

FAMILY TIES BETWEEN VESSEL OWNER AND CREW OF VESSELS CLASSIFIED ON THE BASIS OF PAID LOSS RECORD UNDER PROTECTION AND INDEMNITY INSURANCE[a]

Area - Half or more of the crew related or not related to owner	Vessel with best loss record[b] Percent	No.	Vessels with worst loss record[c] Percent	No.	All reporting in sample Percent	No
I. New England						
1. Owner related to crew	86.8	(145)	13.2	(22)	100.0	(167)
2. Owner not related to crew	39.1	(236)	60.9	(368)	100.0	(604)
Total reporting	49.4	(381)	50.6	(390)	100.0	(771)
II. Gulf Area						
1. Owner related to crew	-	(16)	-	(-)	100.0	(16)
2. Owner not related to crew	100.0	(79)	-	(-)	100.0	(79)
Total reporting	100.0	(95)	-	(-)	100.0	(95)
III. California						
1. Owner related to crew	44.0	(48)	56.0	(61)	100.0	(109)
2. Owner not related to crew	52.1	(186)	47.9	(171)	100.0	(357)
Total reporting	50.2	(234)	49.8	(232)	100.0	(466)

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a/Based on sum of yearly responses for 1950-55.

b/Fifty per cent of vessels with no or smallest paid losses per policy year studied.

c/Fifty per cent of vessels with largest paid losses per policy year studied.

TABLE A-75
NATIONAL ORIGIN OF OFFICER PERSONNEL OF VESSELS CLASSIFIED ON THE BASIS OF PAID LOSS RECORD UNDER PROTECTION AND INDEMNITY INSURANCE

Area - Major categories of national origin of officer personnel	Vessels with best loss record[a]		Vessels with worst loss record[b]		Total in sample	
	Percent	No.	Percent	No.	Percent	No.
I. New England						
1. "Italian"	37.8	(17)	31.4	(16)	34.4	(33)
2. "Portuguese"	42.2	(19)	2.0	(1)	20.8	(20)
3. "Newfoundlander"	8.9	(4)	37.2	(19)	24.0	(23)
4. "Scandinavian"	11.1	(5)	29.4	(15)	20.8	(20)
Total reporting	100.0	(45)	100.0	(51)	100.0	(96)
II. Gulf Area						
1. "American-French," "French," "Italian"	-	(6)	-	(—)	-	(6)
2. "American"	-	(2)	-	(—)	-	(2)
3. "Anglo-Saxon" "Dutch"	-	(7)	-	(—)	-	(7)
Total reporting	100.0	(15)	-	(—)	100.0	(15)
III. California						
1. "Italian"	35.9	(14)	22.2	(8)	29.4	(22)
2. "American"	15.4	(6)	25.0	(9)	20.0	(15)
3. "Yugoslav"	33.3	(13)	38.9	(14)	36.0	(27)
4. "Portuguese"	15.4	(6)	11.1	(4)	13.3	(10)
5. "Anglo-Saxon"	-	(—)	2.8	(1)	1.3	(1)
Total reporting	100.0	(39)	100.0	(36)	100.0	(75)

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a/Fifty per cent of vessels with no or smallest paid losses per policy year studied.

b/Fifty per cent of vessels with largest paid losses per policy year studied.

TABLE A-76

CERTAIN MEASURES FOR THE PREVENTION OF ACCIDENTS IN VESSELS CLASSIFIED ON THE BASIS OF PAID LOSS RECORD UNDER PROTECTION AND INDEMNITY INSURANCE

Area - Type of measure	Vessels with best loss record[a] Percent	No.	Vessels with worst loss record[b] Percent	No.	Total reporting Percent	No.
I. New England						
1. Vessel surveyed when insured	94.1	(64)	88.4	(61)	91.2	(125)
2. Medical chest available and well stocked	89.7	(61)	95.7	(66)	92.7	(127)
Total in sample	100.0	(68)	100.0	(69)	100.0	(137)
II. Gulf Area						
1. Vessel surveyed when insured	-	(12)	-	(—)	-	(12)
2. Medical chest available and well stocked	-	(15)	-	(—)	-	(15)
Total in sample	-	(17)	-	(—)	-	(17)
III. California						
1. Vessel surveyed when insured	95.3	(41)	97.7	(42)	96.5	(83)
2. Medical chest available and well stocked	97.7	(42)	97.7	(42)	97.7	(84)
Total in sample	100.0	(43)	100.0	(43)	100.0	(86)

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[a] Fifty per cent of vessels with no or smallest paid losses per policy year studied.

[b] Fifty per cent of vessels with largest paid losses per policy year studied.

TABLE A-77
LENGTH OF FISHING PERIOD OF VESSELS CLASSIFIED ON THE BASIS OF PAID LOSS RECORD UNDER PROTECTION AND INDEMNITY INSURANCE[a]

Area - Fishing period during 1950-55 (in months)	Vessels with best loss record[b]		Vessels with worst loss record[c]		Total in sample	
	Percent	No.	Percent	No.	Percent	No.
I. New England						
1. One to six	-	(7)	-	(6)	100.0	(13)
2. Seven to ten	54.8	(137)	45.2	(113)	100.0	(250)
3. Eleven to twelve	47.1	(239)	52.9	(268)	100.0	(507)
Total reporting	49.7	(383)	50.3	(387)	100.0	(770)
II. Gulf Area						
1. One to six	-	(13)	-	(—)	100.0	(13)
2. Seven to ten	-	(6)	-	(—)	100.0	(6)
3. Eleven to twelve	100.0	(72)	-	(—)	100.0	(72)
Total reporting	100.0	(91)	-	(—)	100.0	(91)
III. California						
1. One to six	42.5	(57)	57.5	(77)	100.0	(134)
2. Seven to ten	55.6	(144)	44.4	(115)	100.0	(259)
3. Eleven to twelve	43.2	(32)	56.8	(42)	100.0	(74)
Total reporting	49.9	(233)	50.1	(234)	100.0	(467)

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[a] Based on sum of yearly responses for 1950-55.

[b] Fifty per cent of vessels with no or smallest paid losses per policy year studied.

[c] Fifty per cent of vessels with largest paid losses per policy year studied.

TABLE A-78

MAJOR FISHING GROUNDS OF VESSELS CLASSIFIED ON THE BASIS OF PAID LOSS RECORD UNDER PROTECTION AND INDEMNITY INSURANCE[a]

Area - Major fishing grounds during 1950-55	Vessels with best loss record[b]		Vessels with worst loss record[c]		Total in sample	
	Percent	No.	Percent	No.	Percent	No.
I. New England						
1. New England coast	45.2	(284)	54.8	(345)	100.0	(629)
2. Middle Atlantic coast	83.5	(157)	16.5	(31)	100.0	(188)
3. Canada (Grand Banks Nova Scotia)	33.9	(19)	66.1	(37)	100.0	(56)
Total reporting	52.7	(460)	47.3	(413)	100.0	(873)
II. Gulf Area						
1. Gulf Area (north)	100.0	(61)	-	(—)	100.0	(61)
2. Gulf Area (south)	100.0	(34)	-	(—)	100.0	(34)
Total reporting	100.0	(95)	-	(—)	100.0	(95)
III. California						
1. California and West Coast of Mexico	52.3	(192)	47.7	(175)	100.0	(367)
2. Central and South America	44.9	(40)	55.1	(49)	100.0	(89)
Total reporting	50.9	(232)	49.1	(224)	100.0	(456)

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a/Based on sum of yearly responses for 1950-55.

b/Fifty per cent of vessels with no or smallest paid losses per policy year studied.

c/Fifty per cent of vessels with largest paid losses per policy year studied.

TABLE A-79

MAJOR TYPES OF FISHING GEAR OF VESSELS CLASSIFIED ON THE BASIS OF PAID LOSS RECORD UNDER PROTECTION AND INDEMNITY INSURANCE[a]

Area - Major types of fishing gear during 1950-55	Vessels with best loss record[b] Per cent	No.	Vessels with worst loss record[c] Percent	No.	Total in sample Per cent	No.
I. New England						
1. Trawls (otter)	52.8	(303)	47.2	(271)	100.0	(574)
2. Dredges	35.3	(41)	64.7	(75)	100.0	(116)
3. Other[d]	46.3	(38)	53.7	(44)	100.0	(82)
Total reporting	49.5	(382)	50.5	(390)	100.0	(772)
II. Gulf Area						
1. Trawls (mostly shrimp)	100.0	(85)	-	(—)	100.0	(85)
2. Other[e]	-	(6)	-	(—)	100.0	(6)
Total reporting	100.0	(91)	-	(—)	100.0	(91)
III. California						
1. Hook and line	50.0	(106)	50.0	(106)	100.0	(212)
2. Purse seines	48.3	(69)	51.7	(74)	100.0	(143)
3. Other[f]	56.3	(58)	43.7	(45)	100.0	(103)
Total reporting	50.9	(233)	49.1	(225)	100.0	(458)

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[a] Based on sum of yearly responses for 1950-55.

[b] Fifty per cent of vessels with no or smallest paid losses per policy year studied.

[c] Fifty per cent of vessels with largest paid losses per policy year studied.

[d] Stop nets 46, gill nets 24, purse seines 12.

[e] Hook & line 6.

[f] Stop nets 64, trawls 39.

TABLE A-80
MAJOR KINDS OF FISH CAUGHT BY VESSELS CLASSIFIED ON THE BASIS OF PAID LOSS RECORD UNDER PROTECTION AND INDEMNITY INSURANCE[a]

Area - Major kind of fish caught during 1950-55	Vessels with best loss record[b]		Vessels with worst loss record[c]		Total in sample	
	Percent	No.	Percent	No.	Percent	No.
I. New England						
1. Cod, haddock	29.8	(65)	70.2	(153)	100.0	(218)
2. Flounders	62.1	(90)	37.9	(55)	100.0	(145)
3. Whiting	81.1	(90)	18.9	(21)	100.0	(111)
4. Scallops	34.9	(53)	65.1	(99)	100.0	(152)
5. Ocean perch	51.1	(45)	48.9	(43)	100.0	(88)
6. Other[d]	61.2	(30)	38.8	(19)	100.0	(49)
Total reporting	48.9	(373)	51.1	(390)	100.0	(763)
II. Gulf Area						
1. Shrimp	100.0	(85)	-	(—)	100.0	(85)
2. Other[e]	-	(10)	-	(—)	100.0	(10)
Total reporting	100.0	(95)	-	(—)	100.0	(95)
III. California						
1. Tuna	48.1	(141)	51.9	(152)	100.0	(293)
2. Albacore	44.0	(22)	56.0	(28)	100.0	(50)
3. Mackerel	55.0	(22)	45.0	(18)	100.0	(40)
4. Other[f]	62.0	(49)	38.0	(30)	100.0	(79)
Total reporting	50.6	(234)	49.4	(228)	100.0	(462)

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[a] Based on sum of yearly responses for 1950-55.

[b] Fifty per cent of vessels with no or smallest paid losses per policy year studied.

[c] Fifty per cent of vessels with largest paid losses per policy year studied.

[d] Mackerel 15, scup or porgy 15, menhaden 11, clams 6, shrimp 2.

[e] Red snapper 6, sea bass 4.

[f] Pilchard 31, rock cod 18, sea herring 12, anchovies 12, sea bass 6.

TABLE A-81
AMOUNT OF INSURANCE, GROSS AND NET PREMIUMS, AND GROSS OR NET PREMIUM-INSURANCE AMOUNT RATIOS OF VESSELS CLASSIFIED ON THE BASIS OF PAID LOSS RECORD UNDER PROTECTION AND INDEMNITY INSURANCE

Area - Item	Vessels with best loss record[a]	Vessels with worst loss record[b]	All policy years studied
New England			
1. Insurance amount	$15,367,000	$35,193,000	$50,560,000
2. Gross premium	202,858	589,187	792,045
3. Net premium	195,534	572,171	767,705
4. Gross premium--insurance amount ratio	(1.32)	(1.67)	(1.57)
5. Net premium--insurance amount ratio	(1.27)	(1.63)	(1.52)
6. Average gross premium per crew member	$193	$222	$210
Policy years studied	(186)	(259)	(445)
I. Gulf Area			
1. Insurance amount	$1,411,000	-	$1,411,000
2. Gross premium	20,568	-	20,568
3. Net premium	19,521	-	19,521
4. Gross premium--insurance amount ratio	(1.46)	-	(1.46)
5. Net premium--insurance amount ratio	(1.38)	-	(1.38)
6. Average gross premium per crew member	$128	-	$128
Policy years studied	(39)	(—)	(39)
III. California			
1. Insurance amount	$25,838,000	$24,736,000	$50,574,000
2. Gross premium	89,935	72,211	162,146
3. Net premium	84,009	68,293	152,302
4. Gross premium--insurance amount ratio	(0.35)	(0.29)	(0.32)
5. Net premium--insurance amount ratio	(0.33)	(0.28)	(0.30)
6. Average gross premium per crew member	(c)	(c)	(c)
Policy years studied	(171)	(140)	(310)

/Fifty per cent of vessels with no or smallest paid losses per policy year studied.

/Fifty per cent of vessels with largest paid losses per policy year studied.

/Premium is not determined on the basis of size of crew on board a vessel.

TABLE A-82
NET PREMIUM, PAID LOSSES, CLAIM EXPENSES PAID, AND PAID LOSSES AND EXPENSES-NET PREMIUM RATIO OF VESSELS CLASSIFIED ON THE BASIS OF PAID LOSS RECORD UNDER PROTECTION AND INDEMNITY INSURANCE

Area - Item	Vessels with best loss record[a]	Vessels with worst loss record[b]	All policy years studied
I. New England			
1. Net premium	$195,534	$572,171	$767,705
2. Paid losses	5,016	553,551	558,567
3. Claim expenses paid	1,013	84,358	85,371
4. Paid losses & expenses	6,029	637,909	643,938
5. Loss & expense--net premium ratio	(3.08)	(111.5)	(83.88)
Policy years studied	(186)	(259)	(445)
II. Gulf Area			
1. Net premium	$19,521	—	$19,521
2. Paid losses	—	—	
3. Claim expenses paid	—	—	—
4. Paid losses & expenses	—	—	—
5. Loss & expense--net premium ratio	(0)	—	(0)
Policy years studied	(39)	—	(39)
III. California			
1. Net premium	$84,009	$ 68,293	$152,302
2. Paid losses	—	195,081	195,081
3. Claim expenses paid	—	31,564	31,564
4. Paid losses & expenses	—	226,645	226,645
5. Loss & expense--net premium ratio	(0)	(331.9)	(148.8)
Policy years studied	(171)	(140)	(310)

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a/Fifty per cent of vessels with no or smallest paid losses per policy year studi

b/Fifty per cent of vessels with largest paid losses per policy year studied.

TABLE A-83
LIMITATIONS IN PROTECTION AND INDEMNITY INSURANCE CONTRACTS OF VESSELS CLASSIFIED ON THE BASIS OF PAID LOSS RECORD

Area - Vessel class	Deductible clause applies to:				Owner on board covered for maintenance and cure		Total in sample	
	Personal injury		Property damage					
	Per-cent	Policies with clause	Per-cent	Policies with clause	Per-cent	Policies with coverage	Per-cent	Policy years studied
I. New England								
1. Vessels with best loss record[a/]	38.2	(71)	43.5	(81)	47.8	(89)	100.0	(186)
2. Vessels with worst loss record[b/]	14.7	(38)	32.4	(84)	60.6	(157)	100.0	(259)
Total reporting	24.5	(109)	37.1	(165)	55.3	(246)	100.0	(445)
II. Gulf Area								
1. Vessels with best loss record[a/]	89.7	(35)	89.7	(35)	5.1	(2)	100.0	(39)
2. Vessels with worst loss record[b/]	-	(—)	-	(—)	-	(—)	-	(--)
Total reporting	89.7	(35)	89.7	(35)	5.1	(2)	100.0	(39)
III. California								
1. Vessels with best loss record[a/]	100.0	(171)	100.0	(171)	8.8	(15)	100.0	(171)
2. Vessels with worst loss record[b/]	100.0	(140)	100.0	(140)	.7	(1)	100.0	(140)
Total reporting	100.0	(311)	100.0	(311)	5.1	(16)	100.0	(311)

[a/] Fifty per cent of vessels with no or smallest paid losses per policy year studied.

[b/] Fifty per cent of vessels with largest paid losses per policy year studied.

TABLE A-84
AVERAGE DEDUCTIBLE AMOUNT
PROVIDED BY PROTECTION AND INDEMNITY INSURANCE CONTRACTS OF VESSELS CLASSIFIED ON THE BASIS OF PAID LOSS RECORD

Area - Vessel class	Deductible clause applies to: Personal injury (Dollars)	Property damage (Dollars)	Policy years studied Percent	No.
I New England				
1. Vessels with best loss record[a]	$243	$240	41.8	(186)
2. Vessels with worst loss record[b]	195	202	58.2	(259)
Total average	226	211	100.0	(445)
II. Gulf Area				
1. Vessels with best loss record[a]	$402	$402	100.0	(39)
2. Vessels with worst loss record[b]	—	—	—	(--)
Total average	402	402	100.0	(39)
III. California				
1. Vessels with best loss record[a]	$730	$252	55.0	(171)
2. Vessels with worst loss record[b]	570	254	45.0	(140)
Total average	658	253	100.0	(311)

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a/Fifty per cent of vessels with no or smallest paid losses per policy year studied.
b/Fifty per cent of vessels with largest paid losses per policy year studied.

TABLE A-85
AMOUNT OF INSURANCE, GROSS AND NET PREMIUMS, AND GROSS AND NET PREMIUM÷INSURANCE AMOUNT RATIOS OF HULL INSURANCE POLICIES WRITTEN BY AMERICAN AND ALIEN INSURANCE COMPANIES

Area - Item	Policies written by American insurers	Policies written by Alien Insurers	All policy years studied
I. New England			
1. Insurance amount	$21,207,000	$3,474,000	$24,681,000
2. Gross premium	967,131	157,886	1,125,017
3. Net premium	928,514	149,062	1,077,576
4. Gross premium÷insurance amount ratio	(4.56)	(4.54)	(4.56)
5. Net premium÷insurance amount ratio	(4.38)	(4.29)	(4.37)
6. Average insurance rate	(5.77)	(6.22)	(5.84)
Policy years studied	(393)	(70)	(463)
II. Gulf Area			
1. Insurance amount	$4,756,000	$20,000	$4,776,000
2. Gross premium	250,685	1,500	252,185
3. Net premium	243,853	1,500	245,353
4. Gross premium÷insurance amount ratio	(5.27)	(7.50)	(5.28)
5. Net premium÷insurance amount ratio	(5.13)	(7.50)	(5.14)
6. Average insurance rate	(5.44)	(7.50)	-
Policy years studied	(223)	(4)	(227)
III. California			
1. Insurance amount	$17,089,000	$17,301,000	$34,390,000
2. Gross premium	1,128,875	1,059,328	2,188,203
3. Net premium	1,012,503	1,010,333	2,022,836
4. Gross premium÷insurance amount ratio	(6.61)	(6.12)	(6.36)
5. Net premium÷insurance amount ratio	(5.92)	(5.84)	(5.88)
6. Average insurance rate	(7.31)	(7.27)	(7.30)
Policy years studied	(205)	(133)	(338)

TABLE A-86

NET PREMIUM. PAID LOSSES, CLAIM EXPENSES PAID, AND PAID LOSSES AND EXPENSES-NET PREMIUM RATIO OF HULL INSURANCE POLICIES WRITTEN BY AMERICAN AND ALIEN INSURANCE COMPANIES

Area- Item	Policies written by American Insurers	Policies written by Alien Insurers	All policy years studied
I. New England			
1. Net premium	$928,514	$149,062	$1,077,576
2. Paid losses	559,763	121,043	680,806
3. Claim expenses paid	26,146	3,293	29,439
4. Paid losses & expenses	585,909	124,336	710,245
5. Loss & expense÷net premium ratio	(63.1)	(83.4)	(65.9)
Policy years studied	(393)	(70)	(463)
II. Gulf Area			
1. Net premium	$243,853	$1,500	$245,353
2. Paid losses	163,835	417	164,252
3. Claim expenses paid	5,021	41	5,062
4. Paid losses & expenses	168,856	458	169,314
5. Loss & expense÷net premium ratio	(69.2)	(30.5)	(69.0)
Policy years studied	(223)	(4)	(227)
III. California			
1. Net premium	$1,012,503	$1,010,333	$2,022,836
2. Paid losses	702,496	173,369	875,765
3. Claim expenses paid	15,874	6,045	21,919
4. Paid losses & expenses	718,370	179,414	897,784
5. Loss & expense÷net premium ratio	(70.9)	(17.8)	(44.4)
Policy years studied	(205)	(133)	(338)

TABLE A-87
LATENT DEFECTS IN HULL INSURANCE POLICIES WRITTEN BY AMERICAN AND ALIEN INSURANCE COMPANIES

Area —Insurer	Full coverage		Excludes negligence on machinery		All policies in sample	
	Per-cent	Policies	Per-cent	Policies	Per-cent	Policies
I. New England						
1. Policies written by American Insurers	35.9	(141)	57.3	(225)	100.0	(393)
2. Policies written by Alien Insurers	78.3	(54)	7.2	(5)	100.0	(69)
Total reporting	42.2	(195)	49.8	(230)	100.0	(462)
II. Gulf Area						
1. Policies written by American Insurers	44.8	(100)	7.6	(17)	100.0	(223)
2. Policies written by Alien Insurers	-	(—)	-	(—)	-	(4)
Total reporting	44.1	(100)	7.5	(17)	100.0	(227)
III. California						
1. Policies written by American Insurers	92.2	(188)	(a)		100.0	(04)
2. Policies written by Alien Insurers	96.2	(128)	(a)		100.0	(133)
Total reporting	93.8	(316)			100.0	(337)

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a/No contracts with this provision in the California sample.

TABLE A-38
FRANCHISE AND/OR DEDUCTIBLE CLAUSES IN HULL INSURANCE POLICIES WRITTEN BY AMERICAN AND ALIEN INSURANCE COMPANIES

Area—Insurer	Contracts with franchise		Contracts with deductible		All policies in sample	
	Percent	Policies	Percent	Policies	Percent	Poli
I. New England						
1. Policies written by American Insurers	64.6	(254)	48.6	(191)	100.0	(393)
2. Policies written by Alien Insurers	5.8	(4)	72.5	(50)	100.0	(69)
Total reporting	55.8	(258)	52.2	(241)	100.0	(462)
II. Gulf Area						
1. Policies written by American Insurers	(a)		96.0	(214)	100.0	(223)
2. Policies written by Alien Insurers			-	(4)	100.0	(4)
Total reporting			96.0	(218)	100.0	(227)
III. California						
1. Policies written by American Insurers	75.0	(153)	71.6	(146)	100.0	(204)
2. Policies written by Alien Insurers	54.9	(73)	43.6	(58)	100.0	(133)
Total reporting	67.1	(226)	60.5	(204)	100.0	(337)

a/No contracts with franchise clause in the Gulf Area.

TABLE A-89
FRANCHISE CLAUSE IN HULL INSURANCE POLICIES WRITTEN BY AMERICAN AND ALIEN INSURANCE COMPANIES

Area - Insurer	Franchise applies to all claims except collision			All policies in sample	
	Policy years		Aver. amount		
	Percent	Number	Dollars	Percent	Policy years
I. New England					
1. Policies written by American Insurers	63.1	(248)	$ 607	100.0	(393)
2. Policies written by Alien Insurers	-	(3)	1167	100.0	(69)
Total reporting	54.3	(251)	613	100.0	(462)
II. Gulf Area a/					
1. Policies written by American Insurers					
2. Policies written by Alien Insurers					
Total reporting					
III. California					
1. Policies written by American Insurers	75.0	(153)	$2,000	100.0	(204)
2. Policies written by Alien Insurers	52.6	(70)	2,979	100.0	(133)
Total reporting	66.2	(223)	2,306	100.0	(337)

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a/No contracts with franchise clause in the Gulf Area sample.

TABLE A-90

DEDUCTIBLE AVERAGE APPLIED TO ALL CLAIMS IN HULL INSURANCE POLICIES WRITTEN BY AMERICAN AND ALIEN INSURERS

Area--Insurer	Deductible applies to all claims of whatsoever nature			All policies in sample	
	Policy years		Aver. amount		Policy
	Percent	Number	Dollars	Percent	years
I. New England					
1. Policies written by American Insurers	6.4	(25)	$290	100.0	(393)
2. Policies written by Alien Insurers	8.7	(6)	250	100.0	(69)
Total reporting	6.7	(31)	282	100.0	(462)
II. Gulf Area					
1. Policies written by American Insurers	71.7	(160)	$426	100.0	(223)
2. Policies written by Alien Insurers	-	(4)	150	-	(4)
Total reporting	72.2	(164)	420	100.0	(227)
III. California					
1. Policies written by American Insurers	10.8	(22)	$361	100.0	(204)
2. Policies written by Alien Insurers	31.6	(42)	330	100.0	(133)
Total reporting	19.0	(64)	341	100.0	(337)

TABLE A-91

DEDUCTIBLE AVERAGES WITH EXCEPTIONS IN HULL INSURANCE POLICIES WRITTEN BY AMERICAN AND ALIEN INSURANCE COMPANIES

Area - Insurer	Applies to all claims except collision			Applies to all claims except sue and labor and collision			All policies in sample	
	Policy years		Aver. amount	Policy years		Aver. amount		
	Percent	Number	Dollars	Percent	Number	Dollars	Percent	Policy years
I. New England								
1. Policies written by American Insurers	18.1	(71)	$341	24.2	(95)	$290	100.0	(393)
2. Policies written by Alien Insurers	13.0	(9)	583	50.7	(35)	272	100.0	(69)
Total reporting	17.3	(80)	368	28.1	(130)	285	100.0	(462)
II. Gulf Area								
1. Policies written by American Insurers	24.2	(54)	$388	(a)		(a)	100.0	(223)
2. Policies written by Alien Insurers	-	(—)	-				100.0	(4)
Total reporting	23.8	(54)	388				100.0	(227)
III. California								
1. Policies written by American Insurers	8.3	(17)	$ 279	58.5	(107)	$460	100.0	(204)
2. Policies written by Alien Insurers	9.8	(13)	1,719	2.3	(3)	533	100.0	(133)
Total reporting	8.9	(30)	903	32.6	(110)	464	100.0	(337)

[a] No contracts with such provision in the Gulf Area sample.

TABLE A-92
EXCLUSIONS ON LOSS OF EQUIPMENT IN HULL INSURANCE POLICIES WRITTEN BY AMERICAN AND ALIEN INSURANCE COMPANIES

Area - Insurer	All policies with exclusion on loss of equipment		Fishing gear, nets and tackle, etc.[a]		All policies in sample	
	Percent	Policy years	Percent	Policy years	Percent	Policy years
I. New England						
1. Policies written by American Insurers	85.0	(334)	82.2	(323)	100.0	(393)
2. Policies written by Alien Insurers	36.2	(25)	34.8	(24)	100.0	(69)
Total reporting	77.7	(359)	75.1	(347)	100.0	(462)
II. Gulf Area						
1. Policies written by American Insurers	77.1	(172)	57.4	(128)	100.0	(223)
2. Policies written by Alien Insurers	—	(—)	—	(—)	100.0	(4)
Total reporting	75.8	(172)	56.4	(128)	100.0	(227)
III. California						
1. Policies written by American Insurers	94.1	(192)	92.6	(189)	100.0	(204)
2. Policies written by Alien Insurers	97.8	(130)	72.9	(97)	100.0	(133)
Total reporting	95.5	(322)	84.9	(286)	100.0	(337)

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[a] Exclusion reads as follows: New England "Fishing gear, nets and tackle are cover only when under the deck (except in total loss of vessel)"; Gulf Area "Fishing gear, nets, and tackle are covered only;" California "Fishing gear, nets, tackle, cables, and anchor are not covered when lost or sacrificed on fishing grounds."

TABLE A-93
AMOUNT OF INSURANCE, GROSS AND NET PREMIUMS, AND GROSS AND NET PREMIUM÷INSURANCE AMOUNT RATIOS OF PROTECTION AND INDEMNITY INSURANCE POLICIES WRITTEN BY AMERICAN AND ALIEN INSURANCE COMPANIES

Area Item	Policies written by American Insurers	Policies written by Alien Insurers	All policy years studied
. New England			
1. Insurance amount	$11,967,000	$38,593,000	$50,560,000
2. Gross premium	564,969	227,076	792,045
3. Net premium	550,935	216,770	767,705
4. Gross premium÷insurance amount ratio	(4.72)	(.59)	(1.57)
5. Net premium÷insurance amount ratio	(4.60)	(.56)	(1.52)
6. Average gross premium per crewman	$190	$220	$210
Policy years studied	(153)	(293)	(446)
I. Gulf Area			
1. Insurance amount	$1,401,000	$10.000	$1,411,000
2. Gross premium	20,393	175	20,568
3. Net premium	19,346	175	19,521
4. Gross premium÷insurance amount ratio	(1.46)	(1.75)	(1.46)
5. Net premium÷insurance amount ratio	(1.38)	(1.75)	(1.38)
6. Average gross premium per crewman	$139	$44	$128
Policy years studied	(37)	(2)	(39)
II. California			
1. Insurance amount	$40,198,000	$10,376,000	$50,574,000
2. Gross premium	103,223	58,923	162,146
3. Net premium	94,766	57,536	152,302
4. Gross premium÷insurance amount ratio	(0.26)	(0.57)	(0.32)
5. Net premium÷insurance amount ratio	(0.24)	(0.55)	(0.30)
6. Average gross premium per crewman	(a)	(a)	(a)
Policy years studied	(185)	(126)	(311)

/Premium in California is not computed on the basis of size of crew.

TABLE A-94

NET PREMIUM, PAID LOSSES, CLAIM EXPENSES PAID, AND PAID LOSSES AND EXPENSES--NET PREMIUM RATIO OF PROTECTION AND INDEMNITY INSURANCE POLICIES WRITTEN BY AMERICAN AND ALIEN INSURANCE COMPANIES

Area -Item	Policies written by American Insurers	Policies written by Alien Insurers	All polic years studied
I. New England			
1. Net premium	$550,935	$216,770	$767,705
2. Paid losses	178,293	380,274	558,567
3. Claim expenses paid	28,923	56,448	85,371
4. Paid losses & expenses	207,216	436,722	643,938
5. Loss & expense÷net premium ratio	(37.6)	(201.5)	(83.9)
Policy years studied	(153)	(93)	(446)
II. Gulf Area			
1. Net premium	$19,346	$175	$19,521
2. Paid losses	—	—	—
3. Claim expense paid	—	—	—
4. Paid losses & expenses	—	—	—
5. Loss & expense÷net premium ratio	(0)	(0)	(0)
Policy years studied	(37)	(2)	(39)
III. California			
1. Net premium	$94,766	$ 57,536	$152,302
2. Paid losses	65,239	129,842	195,081
3. Claim expenses paid	12,691	18,873	31,564
4. Paid losses & expenses	77,930	148,715	226,645
5. Losses & expense÷net premium ratio	(82.2)	(258.4)	(148.8)
Policy years studied	(185)	(126)	(311)

LIMITATIONS PROVIDED BY PROTECTION AND INDEMNITY INSURANCE POLICIES WRITTEN BY AMERICAN AND ALIEN INSURANCE COMPANIES

Area - Insurer	Deductible clause applies to:				Owner on board covered for maintenance and cure		Total in sample	
	Personal injury		Property damage					
	Percent	Policies with clause	Percent	Policies with coverage	Percent	Policies[a] with coverage	Percent	Policy years studied
I. New England								
1. Policies written by American companies	7.2	(11)	9.9	(15)	41.4	(63)	100.0	(152)
2. Policies written by Alien companies	33.3	(96)	50.3	(145)	63.5	(183)	100.0	(288)
Total reporting	24.3	(107)	36.4	(160)	55.9	(246)	100.0	(440)
II. Gulf Area								
1. Policies written by American companies	86.5	(32)	86.5	(32)	5.4	(2)	100.0	(37)
2. Policies written by Alien companies	-	(2)	-	(2)	-	(—)	100.0	(2)
Total reporting	87.2	(34)	87.2	(34)	5.1	(2)	100.0	(39)
III. California								
1. Policies written by American companies	99.5	(184)	100.0	(185)	-	(—)	100.0	(185)
2. Policies written by Alien companies	100.0	(126)	100.0	(126)	12.7	(16)	100.0	(126)
Total reporting	99.7	(310)	100.0	(311)	5.1	(16)	100.0	(311)

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a/ Figures for Gulf Area and California represent number of policies with no coverage.

TABLE A-96
AVERAGE DEDUCTIBLE AMOUNT
PROVIDED BY PROTECTION AND INDEMNITY INSURANCE POLICIES
WRITTEN BY AMERICAN AND ALIEN INSURANCE COMPANIES

Area - Vessel class	Deductible clause applies to: Personal injury (Dollars)	Deductible clause applies to: Property damage (Dollars)	Policy years studied Percent	Policy years studied No
I. New England				
1. Policies written by American companies	$291	$283	34.5	(152)
2. Policies written by Alien companies	216	203	65.5	(288)
Total reporting	224	210	100.0	(440)
II. Gulf Area				
1. Policies written by American companies	$425	$425	94.9	(37)
2. Policies written by Alien companies	100	100	5.1	(2)
Total reporting	402	402	100.0	(39)
III. California				
1. Policies written by American companies	$622	$256	59.5	(185)
2. Policies written by Alien companies	715	248	40.5	(126)
Total reporting	660	253	100.0	(311)

Area - Kind of accident	Policy year accident occurred 1950-51 Percent	 1950-51 No.	 1951-52 Percent	 1951-52 No.	 1952-53 Percent	 1952-53 No.	 1953-54 Percent	 1953-54 No.	 1954-55 Percent	 1954-55 No.	Total 1950-54 Percent	Total 1950-54 No.
I. New England												
1. Hull damage	60.0	(40)	43.8	(35)	61.8	(42)	52.2	(47)	55.9	(38)	53.9	(202)
2. Machinery and/or equipment	33.3	(23)	35.0	(28)	30.9	(21)	53.3	(48)	50.0	(34)	41.1	(154)
a) Motor	18.8	(13)	23.8	(19)	17.6	(12)	35.6	(32)	27.9	(19)	25.3	(95)
b) Electrical	1.5	(1)	3.8	(3)	2.9	(2)	6.7	(6)	5.9	(4)	4.3	(16)
c) Winches	1.5	(1)	-	(—)	1.5	(1)	2.2	(2)	1.5	(1)	1.3	(5)
d) Fishing gear	1.5	(1)	2.5	(2)	1.5	(1)	6.7	(6)	2.9	(2)	3.2	(12)
Total claims[b]	100.0	(69)	100.0	(80)	100.0	(68)	100.0	(90)	100.0	(68)	100.0	(375)
II. Gulf Area												
1. Hull damage	-	(13)	-	(6)	-	(15)	-	(9)	-	(11)	83.1	(54)
2. Machinery and/or equipment	-	(3)	-	(4)	-	(9)	-	(7)	-	(6)	44.6	(29)
a) Motor	-	(3)	-	(3)	-	(7)	-	(7)	-	(6)	40.0	(26)
b) Electrical	-	(—)	-	(—)	-	(3)	-	(1)	-	(2)	9.2	(6)
c) Winches	-	(—)	-	(—)	-	(—)	-	(—)	-	(3)	4.6	(3)
d) Fishing gear	-	(—)	-	(—)	-	(—)	-	(—)	-	(1)	1.5	(1)
Total claims[b]	100.0	(13)	100.0	(7)	100.0	(18)	100.0	(13)	100.0	(14)	100.0	(65)
III. California												
1. Hull damage	45.0	(18)	-	(10)	27.3	(9)	-	(8)	-	(11)	36.8	(56)
2. Machinery and/or equipment	62.5	(25)	-	(17)	78.8	(26)	-	(17)	-	(18)	67.8	(103)
a) Motor	27.5	(11)	-	(10)	36.4	(12)	-	(10)	-	(14)	37.5	(57)
b) Electrical	7.5	(3)	-	(1)	9.1	(3)	-	(3)	-	(2)	7.9	(12)
c) Winches	-	(—)	-	(—)	6.1	(2)	-	(1)	-	(—)	2.4	(3)
d) Fishing gear	20.0	(8)	-	(6)	21.2	(7)	-	(2)	-	(2)	16.4	(25)
Total claims[b]	100.0	(40)	100.0	(27)	100.0	(33)	100.0	(26)	100.0	(26)	100.0	(152)

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[a] For further information on partial losses see appendix accompanying this table.

[b] Sum of individual responses larger than total number of claims because of accidents causing damage to more than one part of vessel.

APPENDIX TO TABLE A-97
MOST FREQUENTLY CITED PARTS OF THE VESSEL TO WHICH DAMAGE OCCURRED IN HULL INSURANCE ACCIDENTS CAUSING PARTIAL LOSSES

I. New England

1) Hull damage: 120 unspecified hull damage; 25 guard rail, cap rail, top rail, buffalo rail & oak guard; 11 keels, stern, bow & keel shoes; 8 planks & decking; 6 cradles & stanchions; 6 masts; 6 hull leaks; 5 topside; 5 rudder posts; 10 unclassified.

2) Machinery and equipment damage:[a] 28 unspecified equipment and/or machinery damage; 28 propeller; 25 shaft and bearings; 43 motor damage; 10 gears; 10 rudder; 10 wheel; 9 bearings; 8 power boats; 7 electrical; 7 clutch; 7 navigation equipment and 7 winches and fishing gear.

II. Gulf Area

1) Hull damage: 20 unspecified hull damage; 4 hull leaks, keels & stern and 3 top side; 27 unclassified.
2) Machinery and equipment damage:[a] 29 propeller damage; 21 rudder; 20 shaft and bearings; 9 motor damage; 7 unspecified machinery and/or equipment damage; 7 navigation equipment; 6 gears and bearings; 3 electrical; 3 wheels; 3 clutch & shaft boxes.

III. California

1) Hull damage:[a] 34 unspecified damage to hull; 15 keels, sterns, bow; 5 planking and decking; 5 top side and rails and 3 rudder posts.
2) Machinery and equipment damage:[a] 26 power boats; 23 motor damage; 19 propeller; 18 shafts and bearings; 14 rudders; 7 unspecified machinery and/or equipment; 6 loss anchor and chain; 6 bearings; 5 generators; 5 electrical; 5 navigation equipment; 3 skags; 3 turn tables and bilge pump; 3 scallop & stuffing boxes and 3 winches

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[a] Sum of individual responses larger than total number of claims because of accidents causing damage to more than one part of vessel.

TABLE A-98
HULL INSURANCE ACCIDENTS CAUSING PARTIAL LOSSES BY MAJOR KINDS OF DAMAGE TO VESSEL

Kind of damage	I. New England		II. Gulf Area		III. California	
	Percent	Number	Percent	Number	Percent	Number
Damage to hull only	51.9	(166)	54.7	(35)	28.5	(41)
Damage to machinery and/or equipment	36.9	(118)	15.6	(10)	61.1	(88)
Damage to both hull and machinery/equipment	11.2	(36)	29.7	(19)	10.4	(15)
Total reporting kind of damage	100.0	(320)	100.0	(64)	100.0	(144)
Don't Know (no information on parts of vessel to which damage occurred)		(55)		(1)		(8)
Total sample		(375)		(65)		(152)

TABLE A-99
HULL INSURANCE ACCIDENTS
CLASSIFIED BY PRINCIPAL HAZARD, 1950-54

Type of hazard	I. New England		II. Gulf Area		III California	
	Percent	Number	Percent	Number	Percent	Number
1. Navigation hazard (hit object other than a vessel)	34.2	(126)	57.9	(40)	25.5	(39)
2. Mechanical failure	26.9	(99)	11.8	(8)	43.1	(66)
3. Weather	21.2	(78)	11.8	(8)	9.8	(15)[a]
4. Collision with another vessel	12.5	(46)	10.3	(7)	15.9	(24)
5. Collision (with no further description)	3.0	(11)	1.5	(1)	-	(—)
6. Fire hazard	2.2	(8)	5.9	(4)	5.9	(9)
Total reporting	100.0	(368)	100.0	(68)	100.0	(153)
Don't Know (no information available as to typ of hazard involved)		(18)		(1)		(5)
Total claims in sample		(386)		(69)		(158)

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[a] Includes 5 cases of loss of equipment overboard without further explanation.

PRINCIPAL HULL INSURANCE ACCIDENTS
CAUSING PARTIAL LOSS OF VESSEL
CLASSIFIED BY TYPE OF HAZARD

Kind of damage	Type of hazard							
	Navigation hazard including collision		Mechanical failure or fire hazard		Weather		Total reporting hazards	
(1) Damage to hull only	73.4	(124)	2.1	(2)[a]	69.2	(36)	51.3	(162)
(2) Damage to machinery-equipment only	16.0	(27)[b]	86.3	(82)	17.3	(9)	37.3	(118)
(3) Damage to both	10.6	(18)	11.6	(11)	13.5	(7)	11.4	(36)
Total reporting kind of damage	100.0	(169)	100.0	(95)	100.0	(52)	100.0	(316)
Don't Know				(7)		(25)		(59)[c]
Total sample		(179)		(102)		(77)		(375)

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[a] Damage by fire.

[b] Involves vessel hitting submerged object which resulted in damaging the propeller and sometimes in causing further damage to the engine, rudder damage.

[c] Includes seventeen accidents in New England with no information as to the hazard which caused the damage.

TABLE A-100, GULF AREA
PRINCIPAL HULL INSURANCE ACCIDENTS
CAUSING PARTIAL LOSS OF VESSEL
CLASSIFIED BY TYPE OF HAZARD

Kind of damage	Type of hazard: Navigation hazard including collision		Mechanical failure or fire hazard		Weather		Total reporting hazards	
(1) Damage to hull only	62.5	(30)	-	(–)	-	(5)	54.7	(35)
(2) Damage to machinery-equipment only	4.2	(2)[a]	-	(7)	-	(1)	15.6	(10)
(3) Damage to both	33.3	(16)	-	(2)	-	(1)	29.7	(19)
Total reporting kind of damage	100.0	(48)	100.0	(9)	100.0	(7)	100.0	(64)
Don't Know		(--)		(—)		(-)		(1)[b]
Total sample		(48)		(9)		(7)		(65)

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[a] Involves vessel hitting submerged object which resulted in damaging the propeller and sometimes in causing further damage to the engine, rudder damage.

[b] Includes 1 accident in Gulf Area with no information as to the hazard which caused the damage.

TABLE A-100, CALIFORNIA
PRINCIPAL HULL INSURANCE ACCIDENTS
CLASSIFIED BY TYPE OF HAZARD

Kind of damage	Type of hazard							
	Navigation hazard including collision		Mechanical failure or fire hazard		Weather		Total reporting hazards	
(1) Damage to hull only	52.5	(32)	7.5	(5)	-	(4)	28.7	(41)
(2) Damage to machinery-equipment only	32.8	(20)a/	85.1	(57)	-	(10)	60.8	(87)
(3) Damage to both	14.7	(9)	7.4	(5)	-	(1)	10.5	(15)
Total reporting kind of damage	100.0	(61)	100.0	(67)	100.0	(15)	100.0	(143)
Don't Know		(2)		(3)		(—)		(9)b/
Total sample		(63)		(70)		(15)		(152)

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a/Damage to or loss of skiff or motor boat, propeller or rudder damage.
b/Includes 4 accidents in California with no information as to the hazard which caused the damage.

TABLE A-101
MULTIPLE CLASSIFICATION OF HULL INSURANCE ACCIDENTS ON THE BASIS OF ALL FACTORS CONTRIBUTING TO EACH ACCIDENT

Most frequently cited factors contributing to accidents	I. New England		II. Gulf Area		III. California	
	Per-cent	No.	Per-cent	No.	Per-cent	No.
1. Struck submerged object	29.0	(107)	55.9	(38)	18.3	(28)
2. Error of crew[a/]	26.6	(98)	19.1	(13)	28.8	(44)
3. Weather	22.2	(82)	11.8	(8)	9.8	(15)
4. Wear and tear	20,6	(76)	5.9	(4)	32.0	(49)
5. Collision with another vessel	16.0	(59)	13.2	(9)	17.0	(26)
6. Fire	3.8	(14)	5.9	(4)	5.9	(9)
Total claims classified[b/]	100.0	(369)	100.0	(68)	100.0	(153)

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a/In addition to accidents which were directly attributed to human failure or negligence, this category includes collision with another vessel or other similar accidents which might have been the result of human error.

b/Sum of individual responses is larger than the number of claims because each claim (accident) was classified as many times as the number of reported factors which contributed to the accident.

OF VESSELS CLASSIFIED ON THE BASIS OF PAID LOSS
RECORD

Area · Vessel class	Damage to hull only		Damage to machinery-equipment only		Damage to both		All accidents in sample		Don't know	Total sample
	Per-cent	No.	Per-cent	No.	Per-cent	No.	Per-cent	No.	No.	No.
I. New England										
1. Active wood vessels with best loss record[a]	42.9	(27)	47.6	(30)	9.5	(6)	100.0	(63)	(13)	(76)
2. Active wood vessels with worst loss record[b]	53.9	(130)	34.0	(82)	12.1	(29)	100.0	(241)	(39)	(280)
3. Active steel vessels	-	(9)	-	(6)	-	(1)	100.0	(16)	(3)	(19)
Total reporting	51.9	(166)	36.9	(118)	11.2	(36)	100.0	(320)	(55)	(375)
II. Gulf Area										
1. Active wood vessels with best loss record[a]	-	2)	-	(1)	-	-	100.0	(3)	(1)	(4)
2. Active wood vessels with worst loss record[b]	56.3	(18)	18.7	(6)	25.0	(8)	100.0	(32)	—	(32)
3. Active steel vessels	-	(15)	-	(3)	-	(11)	100.0	(29)	—	(29)
Total reporting	54.7	(35)	15.6	(10)	29.7	(19)	100.0	(64)	(1)	(65)
III. California										
1. Active wood vessels with best loss record[a]	-	(5)	-	(8)	-	(1)	100.0	(14)	—	(14)
2. Active wood vessels with worst loss record[b]	28.4	(36)	60.6	(77)	11.0	(14)	100.0	(127)	(8)	(135)
3. Active steel vessels	-	-	-	(3)	-	-	100.0	(3)	—	(3)
Total reporting	28.5	(41)	61.1	(88)	10.4	(15)	100.0	(144)	(8)	(152)

[a] Fifty per cent of active wood vessels with no or smallest losses per policy year studied.

[b] Fifty per cent of active wood vessels with largest losses per policy year studied; includes partial losses of lost vessels.

TABLE A-103

MONTHS ELAPSED BETWEEN CLAIM AND PAYMENT OF LOSS FOR ACCIDENTS COVERED BY HULL INSURANCE

Waiting period (months)	I. New England		II. Gulf Area		III California	
	Percent	Claims	Percent	Claims	Percent	Claims
One	28.9	(46)	39.6	(23)	8.3	(11)
Two	19.5	(31)	19.0	(11)	10.5	(14)
Three	16.4	(26)	15.5	(9)	18.8	(25)
Four to five	14.5	(23)	13.8	(8)	18.0	(24)
Six to nine	13.2	(21)	12.1	(7)	29.3	(39)
Ten or more	7.5	(12)[a]	--	(--)	15.1	(20)[b]
Total reporting	100.0	(159)	100.0	(58)	100.0	(133)
Don't Know (claims not reporting waiting period)		(125)		(6)		(11)
Total in sample		(284)		(62)		(143)

Measurements of central tendency	Months	Months	Months
1. Arithmetic mean	(4.1)	(2.6)	(6.1)
2. Median	(2.1)	(1.6)	(3.7)

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[a] Longest waiting period 49 months.

[b] Longest waiting period 39 months.

TABLE A-104, NEW ENGLAND
HULL INSURANCE ACCIDENTS CAUSING PARTIAL LOSSES
CLASSIFIED BY AMOUNT OF PAID LOSS AND KIND OF DAMAGE TO VESSEL

Kind of damage	Total amount of paid loss		Claims reporting		Paid loss per claim
	Percent	Thousand dollars	Percent	Number	Dollars
1. Damage to hull only	33.5	($129.9)	52.7	(129)	$1,007
2. Damage to machinery and/or equipment only	25.5	(99.0)	35.1	(86)	1,151
3. Damage to both (hull and machinery)	41.0	(159.2)	12.2	(30)	5,307
Claims reporting kind of damage	100.0	(388.1)	100.0	(245)	1,584
Don't Know (no information on kind of damage)		(37.5)		(28)	1,339
Claims reporting partial loss paid		(425.6) a/		(273) a/	1,559

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a/ Sample does not include eleven total losses amounting to $264,138.

TABLE A-104, GULF AREA
HULL INSURANCE ACCIDENTS CAUSING PARTIAL LOSSES
CLASSIFIED BY AMOUNT OF PAID LOSS AND KIND OF DAMAGE TO VESSEL

Kind of damage	Total amount of paid loss		Claims Reporting		Paid loss per claim Dollars
	Percent	Thousand dollars	Percent	Number	
1. Damage to hull only	35.8	($30.1)	52.5	(31)	$972
2. Damage to machinery and/or equipment only	12.5	(10.5)	13.6	(8)	1,313
3. Damage to both (hull and machinery)	51.5	(43.3)	33.9	(20)	2,167
Claims reporting kind of damage	100.0	(84.0)	100.0	(59)	1,423
Don't Know (no information on kind of damage		(—)		(—)	-
Claims reporting partial loss paid		(84.0)[a]		(59)[a]	1,424

[a] Sample does not include three total losses amounting to $85,000.

TABLE A-104, CALIFORNIA
HULL INSURANCE ACCIDENTS CAUSING PARTIAL LOSSES
CLASSIFIED BY AMOUNT OF PAID LOSS AND KIND OF DAMAGE TO VESSEL

Kind of damage	Total amount of paid loss		Claims reporting		Paid loss per claim
	Percent	Thousand Dollars	Percent	Number	Dollars
1. Damage to hull only	16.2	($51.8)	26.4	(34)	$1,523
2. Damage to machinery and/or equipment only	57.3	(183.4)	63.6	(82)	2,237
3. Damage to both (hull and machinery)	26.5	(85.1)	10.0	(13)	6,546
Claims reporting kind of damage	100.0	(320.3)	100.0	(129)	2,483
Don't know (no information on kind of damage)		(9.1)		(7)	1,300
Claims reporting loss paid		(329.4) a/		(136) a/	2,422

a/ Sample does not include total losses.

TABLE A-105
AMOUNT OF PAID LOSSES FOR HULL INSURANCE ACCIDENTS BY PRINCIPAL HAZARD REPORTED

Type of hazard	I. New England			II. Gulf Area			III. California		
	Amount[a] Thousand dollars	Claims reporting	Loss per claim Dollars	Amount[a] Thousand dollars	Claims reporting	Loss per claim Dollars	Amount[a] Thousand dollars	Claims reporting	Loss per claim Dollars
1. Navigation hazard (hit object other than a vessel)	$174.8	(92)	$1,900	$26.6	(36)	$739	$328.2	(34)	$9,652
2. Mechanical failure	110.6	(72)	1,536	19.5	(6)	3,257	297.8	(59)	5,047
3. Weather	166.2	(59)	2,818	36.7	(8)	4,591	24.8[b]	(15)	1,656
4. Collision with another vessel or unspecified	27.5	(40)	688	8.4	(8)	1,053	13.2	(20)	662
5. Fire hazard	155.4	(8)	19,423	77.8	(4)	19,421	203.2	(9)	22,576
All claims reporting hazard[c]	634.5	(271)	2,341	169.0	(62)	2,726	867.2	(137)	6,330

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[a] Includes total losses as follows: New England, navigation hazard with 4 vessels amouting to a total loss of $104,638; mechanical failure with 1 loss of $12,000; and fire hazard with 4 losses of $122,500.

[b] Gulf Area, weather with 1 loss of $15,000; fire hazard with 2 losses of $70,000. California, navigation hazard with 1 loss of $225,000; mechanical failure with 1 loss of $125,000; and fire hazard with 4 losses of $146,750.

[c] Includes loss of equipment overboard.

[d] Exclude claims which do not report hazard.

TABLE A-106, NEW ENGLAND
AMOUNT OF PAID LOSS FOR HULL INSURANCE ACCIDENTS BY MONTHS ELAPSED BETWEEN CLAIM AND PAYMENT OF LOSS

Waiting period (months)	Partial losses					Total losses			
	Total amount of paid loss		Claims		Loss per claim	Total amount		Number of claims	Loss per claim
	Per-cent	Thousand dollars	Per-cent	Number	dollars	Per-cent	Thousand dollars		Thousand dollars
One or less	12.3	($38.6)	28.8	(42)	$ 920	50.4	($122.5)	(4)	$30.6
Two	15.8	(50.1)	19.1	(28)	1,788	32.8	(79.6)	(3)	26.5
Three	18.3	(57.8)	16.5	(24)	2,408	6.5	(15.8)	(2)	7.9
Four to five	19.6	(61.8)	15.1	(22)	2,807	10.3	(25.0)	(1)	25.0
Six or more	34.0	(107.3)	20.5	(30)	3,576	-	(—)	-	-
All claims reporting period	100.0	(315.6)	100.0	(146)	2,161	100.0	(242.9)	(10)	24.3
Don't know (no information on waiting period)		(110.1)		(127)	867		(21.2)	(1)	21.2
Claims reporting loss paid		(425.6)		(273)	1,559		(264.1)	(11)	24.0

TABLE A-106, GULF AREA
AMOUNT OF PAID LOSS FOR HULL INSURANCE ACCIDENTS BY MONTHS ELAPSED BETWEEN CLAIM AND PAYMENT OF LOSS

Waiting period (months)	Partial losses					Total losses			
	Total amount of paid loss		Claims		Loss per claim	Total amount of paid loss		Number of claims	Loss per claim
	Per-cent	Thousand dollars	Per-cent	Number	dollars	Per-cent	Thousand dollars		Thousand dollars
One or less	13.7	($10.6)	38.2	(21)	$ 507	41.2	($35.0)	(2)	$17.5
Two	34.0	(26.2)	20.0	(11)	2,380	-	-	—	-
Three	32.7	(25.2)	16.4	(9)	2,804	-	-	—	-
Four to five	10.9	(8.4)	14.5	(8)	1,053	-	-	—	-
Six or more	8.7	(6.7)	10.9	(6)	1,132	58.8	(50.0)	(1)	50.0
All claims reporting period	100.0	(77.1)	100.0	(55)	1,403	100.0	(85.0)	(3)	28.3
Don't know (no information on waiting period)		(6.9)		(3)	2,300		-	—	-
Claims reporting loss period		(84.0)		(58)	1,448		(85.0)	(3)	28.3

TABLE A-106, CALIFORNIA
AMOUNT OF PAID LOSS FOR HULL INSURANCE ACCIDENTS BY MONTHS ELAPSED BETWEEN CLAIM AND PAYMENT OF LOSS

Waiting period (months)	Partial losses					Total losses			
	Total amount of paid loss		Claims		Loss per claim	Total amount		Number of claims	Loss per claim
	Per-cent	Thousand dollars	Per-cent	Number	Dollars	Per-cent	Thousand dollars		Thousand dollars
One or less	3.3	($9.9)	8.9	(11)	$ 897	-	(-)	(-)	-
Two	7.6	(22.9)	9.7	(12)	1,909	73.9	($350.0)	(2)	$175.0
Three	14.1	(42.3)	19.4	(24)	1,763	-	(—)	(-)	-
Four to five	8.0	(24.1)	17.7	(22)	1,096	-	(—)	(-)	-
Six to nine	34.4	(103.4)	29.0	(36)	2,872	26.1	(123.5)	(2)	61.8
Ten or more	32.6	(98.0)	15.3	(19)	5,158	-	(—)	(-)	-
All claims reporting period	100.0	(300.6)	100.0	(124)	2,424	100.0	(473.5)	(4)	118.4
Don't know (no information on waiting period)		(28.8)		(12)	2,400		(73.3)	(2)	
Claims reporting loss paid		(329.4)		(136)	2,422		(546.8)	(6)	

TABLE A-107

CUMULATIVE DISTRIBUTION OF AMOUNT OF PAID PARTIAL LOSSES FOR HULL INSURANCE ACCIDENTS BY MONTHS ELAPSED BETWEEN CLAIM AND PAYMENT OF LOSS

Area - Waiting period (months)	Total amount of paid partial loss (in thousand dollars)				Number of claims			
	No more than		No less than		No more than		No less than	
	Per-cent	Amount	Per-cent	Amount	Per-cent	Number	Per-cent	Number
I. New England								
One or less	12.3	(38.6)	100.0	(315.6)	28.8	(42)	100.0	(146)
Two	28.1	(88.7)	87.7	(276.9)	47.9	(70)	71.2	(104)
Three	46.4	(146.5)	71.7	(226.8)	64.4	(94)	52.1	(76)
Four to five	66.0	(208.3)	53.5	(169.0)	79.5	(116)	35.6	(52)
Six or more	100.0	(315.6)	34.0	(107.3)	100.0	(146)	20.5	(30)
II. Gulf Area								
One or less	13.7	(10.6)	100.0	(77.1)	38.2	(21)	100.0	(55)
Two	47.7	(36.8)	86.3	(66.5)	58.2	(32)	61.8	(34)
Three	80.4	(62.0)	52.3	(40.3)	74.5	(41)	41.8	(23)
Four to five	91.3	(70.4)	19.6	(15.1)	89.1	(49)	25.5	(14)
Six or more	100.0	(77.1)	8.7	(6.7)	100.0	(55)	10.9	(6)
III. California								
One or less	3.2	(9.9)	100.0	(300.6)	8.9	(11)	100.0	(124)
Two	10.9	(32.8)	96.7	(290.7)	17.7	(22)	91.1	(113)
Three	25.0	(75.1)	89.1	(267.8)	37.9	(47)	81.5	(101)
Four to five	33.0	(99.2)	75.0	(225.5)	55.6	(69)	62.1	(77)
Six to nine	67.4	(202.6)	67.0	(201.4)	84.7	(105)	44.4	(55)
Ten or more	100.0	(300.6)	32.6	(98.0)	100.0	(124)	15.3	(19)

TABLE A-108
AMOUNT CLAIMED, AMOUNT OF PAID LOSSES, AND PAID EXPENSES RATIOS OF HULL INSURANCE ACCIDENTS

Item	Amounts in thousands of dollars[a/]		
	I. New England	II. Gulf Area	III. California
I. Claimed and paid amount of loss			
1. Claimed losses	$723.4	$185.0	$469.1
2. Paid losses	613.3	168.8	422.8
3. Paid÷claimed amount of loss ratio	(84.8)	(91.3)	(90(1)
Number of claims reporting both amounts	(241)	(61)	(93)
II. Paid losses & expenses			
1. All paid losses	$689.7	$169.0	$863.9
2. Paid losses reporting paid expenses	556.4	137.8	516.8
3. Paid expenses	29.4	5.1	21.4
4. Expense÷all paid losses ratio (Rows 3÷1)	(4.3)	(3.0)	(2.5)
5. Expense÷paid loss reporting expense ratio (Rows 3÷2)	(5.3)	(3.7)	(4.1)
Number of claims reporting both loss and expense	(190)	(42)	(121)

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a/ Does not apply to all paid losses. Number of claims for that item are as follows: New England 284; Gulf Area 62; California 143.

TABLE A-109

MONTHS ELAPSING BETWEEN CLAIM AND PAYMENT OF LOSS FOR HULL INSURANCE ACCIDENTS BY AMERICAN AND ALIEN INSURERS

Waiting period (months)	I. New England				II. Gulf Area				III. California			
	American Insurers		Alien Insurers		American Insurers		Alien Insurers		American Insurers		Alien Insurers	
	Per-cent	Number	Per-cent	Number	Per-cent	Number	Per-cent	Number	Per-cent	Number	Per-cent	Number
One or less	33.1	(46)	-	(—)	40.4	(23)	-	(—)	10.4	(8)	7.1	(3)
Two	20.1	(28)	-	(3)	17.5	(10)	-	(1)	11.7	(9)	9.5	(4)
Three	16.7	(23)	-	(3)	15.8	(9)	-	(—)	20.8	(16)	16.7	(7)
Four to five	12.9	(18)	-	(5)	14.0	(8)	-	(—)	15.6	(12)	23.8	(10)
Six or more	17.2	(24)	-	(9)	12.3	(7)	-	(—)	41.5	(32)	42.9	(18)
Claims reporting waiting period	100.0	(139)	100.0	(20)	100.0	(57)	100.0	(1)	100.0	(77)	100.0	(42)
Don't know		(122)		(3)		(2)		(1)		(8)		(—)
Paid claims in sample		(261)		(23)		(59)		(2)		(85)		(42)
Measurements of central tendency		Months		Months		Months		Months		Months		Months
1. Arithmetic mean		4.0		4.7		2.5		-		6.3		5.3
2. First quartile		.8		-		.6		-		2.1		2.5
3. Second quartile (median)		1.9		5.3		1.6		-		4.0		4.5
4. Third quartile		4.9		-		3.2		-		7.1		6.2

TABLE A - 110
AVERAGE AGE AND GROSS TONNAGE OF VESSELS LOST DURING 1949 TO 1955[a]

AGE AND GROSS TONNAGE BY AREA	YEAR LOSS OCCURRED							Total
	1949	1950	1951	1952	1953	1954	1955	
1. New England								
1. Age (in years)	19.4	25.2	21.1	32.2	24.3	23.3	24.9	23.7
2. Gross tonnage	63.4	51.0	57.8	56.9	65.2	37.7	57.8	55.2
Number of lost vessels	(24)	(12)	(13)	(12)	(25)	(27)	(17)	(130)
11. Gulf Area[b]								
1. Age (in years)	16.5	20.7	14.6	12.1	11.1	10.9	16.2	14.1
2. Gross tonnage	23.4	19.6	35.6	45.9	36.9	43.9	44.8	37.5
Number of lost vessels	(18)	(26)	(35)	(20)	(37)	(55)	(52)	(248)
111. California[b]								
1. Age (in years)	14.1	12.9	16.9	15.5	15.4	16.9	16.1	15.4
2. Gross tonnage	99.3	71.7	38.0	82.7	123.8	80.0	120.7	83.4
Number of lost vessels	(22)	(33)	(28)	(45)	(20)	(27)	(17)	(199)

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[a] Figures represent all vessels lost from the population of active vessels registered in home ports of each area.

[b] Figures include 5 lost vessel in the Gulf Area and 7 in California with unknown date vessel was lost.

TABLE A-111
VESSEL POPULATION MOVEMENTS, 1950-54

Area	Number of vessels (1)	Gross tonnage		Net tonnage	
		Total (2)	Per vessel (3)	Total (4)	Per vessel (5)
I. New England					
1. Vessels built in 1950-54	16	1,004	63	652	41
2. Vessels lost in 1950-54	26	1,251	48	747	29
3. Population change					
a) increase +			+15		+12
b) decrease -	-10	-247		-95	
II. Gulf Area					
1. Vessels built in 1950-54	39	2,051	53	1,165	30
2. Vessels lost in 1950-54	18	455	25	241	13
3. Population change					
a) increase +	+21	+1,596	+28	+924	+17
b) decrease -					
III. California					
1. Vessels built in 1950-54	29	3,864	133	1,986	68
2. Vessels lost in 1950-54	30	1,934	64	978	33
3. Population change					
a) increase +		+1,930	+69	+1,008	+35
b) decrease -	-1				

TABLE A-112
FREQUENCY OF ACCIDENTS
COVERED BY PROTECTION AND INDEMNITY INSURANCE,
POLICY YEARS, 1950-54[a]

Area--kind of accident	Policy year accident occurred										Total	
	1950-51		1951-52		1952-53		1953-54		1954-55		1950-54	
	Per-cent	No.	Per-cent	No.	Per-cent	No.	Per-cent	No.	Per-cent	No.	Per-cent	No.
I. New England												
1 **Injury** (excluding death)	77.0	(107)	82.4	(145)	81.5	(132)	79.7	(149)	80.0	(116)	80.1	(649)
2 Sickness	17.3	(24)	16.5	(29)	16.7	(27)	19.3	(36)	19.3	(28)	17.8	(144)
3 Death	5.7	(8)	1.1	(2)	1.2	(2)	1.0	(2)	-	(-)	1.7	(14)
4 Other[b]	-	(-)	-	(-)	0.6	(1)	-	(-)	0.7	(1)	0.4	(2)
Reporting	100.0	(139)	100.0	(176)	100.0	(162)	100.0	(187)	100.0	(145)	100.0	(809)
Don't know		(4)		(6)		(8)		(5)		(12)		(35)
Total sample		(143)		(182)		(170)		(192)		(157)		(844)
II. Gulf Area[c]												
III. California												
1 Injury (excluding death)	-	(8)	-	(9)	-	(16)	-	(13)	-	(7)	82.8	(53)
2 Sickness	-	(3)	-	(3)	-	(-)	-	(--)	-	(-)	9.4	(6)
3 Death	-	(-)	-	(-)	-	(1)	-	(--)	-	(1)	3.1	(2)
4 Other[b]	-	(-)	-	(1)	-	(-)	-	(2)		(-)	4.7	(3)
Reporting	100.0	(11)	100.0	(13)	100.0	(17)	100.0	(15)	100.0	(8)	100.0	(64)
Don't know		(-)		(-)		(-)		(-)		(-)		(-)
Total sample		(11)		(13)		(17)		(15)		(8)		(64)

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[a] For further information on accidents, see the appendix to this table.

[b] Includes property damage, loss of time and catch by illegal seizure and fines covered by protection and indemnity insurance.

[c] No claims in the Gulf Area.

APPENDIX TO TABLE A-112
THE FOLLOWING ARE THE
MOST FREQUENTLY OCCURRING ACCIDENTS
COVERED BY PROTECTION AND INDEMNITY INSURANCE

I. New England

1) Personal injury; 91 finger; 88 back; 67 hand; 40 rib, 39 leg; 31 arm; 28 knee; 24 feet; 22 eye; 23 head; 21 elbow; 17 shoulder; 17 ankle; 15 wrist; 15 side; 10 ruptures; 10 multiple injuries from a fall; 7 teeth; 7 groin; 5 hip; 5 face; 18 miscellaneous accidents, 49 unclassified.

2) Sickness: 18 severe cold; 17 blood poisoning; 10 ulcer; 8 appendix; 8 infected hand; 7 exposures; 6 heart attack; 6 dermititis; 6 infected fingers; 5 upset stomach; 4 tonsilitis; 3 eye infection; 33 other miscellaneous sicknesses, 13 unclassified.

3) Death: 14.

4) Property damage: 1 hit object; 1 broken glasses.

II. California

1) Personal injury: 10 finger; 8 leg; 5 back; 4 multiple injuries caused by a fall; 4 arm; 2 elbow; 3 knee; 2 feet; 2 burns; 2 neck; 6 other miscellaneous accidents; 5 unclassified.

2) Sickness: 1 blood poisoning; 1 buerger's disease; 1 pernicious anemia; 3 unclassified.

3) Death: 2.

4) Property damage: 1 hit object; 2 claims against ship & members because of fishing in restricted waters.

TABLE A-113

FREQUENCY OF ACCIDENTS TO
OFFICER PERSONNEL AND CREW
COVERED BY PROTECTION AND INDEMNITY INSURANCE,
POLICY YEARS, 1950-54

Area--Personnel and crew	Policy years										Total 1950-54	
	1950-51		1951-52		1952-53		1953-54		1954-55			
	Per-cent	No.	Per-cent	No.	Per-cent	No.	Per-cent	No.	Per-cent	No.	Per-cent	No.
I. New England												
1 Officer Personnel	14.4	(16)	16.0	(23)	14.8	(21)	16.9	(31)	16.3	(23)	15.8	(114)
2 Crew	85.6	(95)	84.0	(121)	85.2	(121)	83.1	(152)	83.7	(118)	84.2	(607)
Total reporting	100.0	(111)	100.0	(144)	100.0	(142)	100.0	(183)	100.0	(141)	100.0	(721)
Don't know and other		(32)		(38)		(28)		(9)		(16)		(123)
Total sample		(143)		(182)		(170)		(192)		(157)		(844)
II. Gulf Area[a]												
III. California												
1 Officer Personnel	-	(-)	-	(1)	-	(6)	-	(5)	-	(1)	24.5	(13)
2 Crew	-	(9)	-	(9)	-	(9)	-	(8)	-	(5)	75.5	(40)
Total reporting	100.0	(9)	100.0	(10)	100.0	(15)	100.0	(13)	100.0	(6)	100.0	(53)
Don't know and other		(2)		(3)		(2)		(2)		(2)		(11)
Total sample		(11)		(13)		(17)		(15)		(8)		(64)

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[a] No claims in Gulf Area.

TABLE A-114

PROTECTION INDEMNITY INSURANCE ACCIDENTS BY KIND OF ACCIDENT AND PERSONNEL INJURED IN THE ACCIDENT

Area--kind of accident	Vessel's personnel: Officer Personnel Per-cent	Vessel's personnel: Officer Personnel No.	Vessel's personnel: Crew Per-cent	Vessel's personnel: Crew No.	Total Reporting Per-cent	Total Reporting No.	Don't know No.	Total Sample No.
I. New England								
1. Injury (excluding death)	14.3	(83)	85.7	(496)	100.0	(579)	(71)	(650)
2. Sickness	21.0	(26)	79.0	(98)	100.0	(124)	(20)	(144)
3. Death	-	(3)	-	(11)	100.0	(14)	(—)	(14)
4. Other[a]	-	(-)	-	(1)	100.0	(1)	(10)	(11)
Total reporting	15.6	(112)	84.4	(606)	100.0	(718)	(101)	(819)
Don't know	-	(2)	-	(2)	100.0	(4)	(21)	(25)
Total sample	15.8	(114)	84.2	(608)	100.0	(722)	(122)	(844)
II. Gulf Area[b]								
III. California								
1. Injury (excluding death)	28.3	(13)	71.7	(33)	100.0	(46)	(7)	(53)
2. Sickness	-	(-)	-	(5)	100.0	(5)	(1)	(6)
3. Death	-	(-)	-	(1)	100.0	(1)	(1)	(2)
4. Other[a]	-	(-)	-	(1)	100.0	(1)	(2)	(3)
Total reporting	24.5	(13)	75.5	(40)	100.0	(53)	(11)	(64)
Don't know	-	(-)	-	(-)	100.0	(-)	(-)	(-)
Total sample	24.5	(13)	75.5	(40)	100.0	(53)	(11)	(64)

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[a] Includes property damage, loss of time and catch due to illegal seizure and fines.

[b] No claims in Gulf Area.

TABLE A-115
MONTHS ELAPSING BETWEEN CLAIM AND PAYMENT OF LOSS FOR ACCIDENTS COVERED BY PROTECTION AND INDEMNITY INSURANCE[a]

Waiting period (months)	I New England		III California	
	Per cent	Claims	Per cent	Claims
One or less	24.9	(157)	18.9	(9)
Two	16.0	(101)	6.3	(3)
Three	10.2	(64)	12.5	(6)
Four	8.4	(53)	4.1	(2)
Five	6.8	(43)	8.3	(4)
Six	4.3	(27)	6.3	(3)
Seven to eight	6.8	(43)	8.3	(4)
Nine to ten	5.9	(37)	6.3	(3)
Eleven to twelve	3.5	(22)	4.1	(2)
Thirteen to eighteen	5.9	(37)	4.1	(2)
Nineteen to thirty	5.2	(33)	16.7	(8)
Thirty-one or more[b]	2.1	(13)	4.1	(2)
Claims reporting waiting period	100.0	(630)	100.0	(48)
Don't know		(214)		(16)
Claims in sample		(344)		(64)
Measurements of central tendency		Months		Months
1. Arithmetic mean		6.4		10.3
2. Median		2.9		5.5

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a/No claims in Gulf Area.

b/The longest waiting period recorded was 77 months for New England 62 months for California.

TABLE A-116
AGE OF PERSON INVOLVED IN ACCIDENT COVERED BY PROTECTION AND INDEMNITY INSURANCE[a]

Age of person involved in accident (in years)	I New England Per cent	 Accidents	III California Per cent	 Accidents
17-25	8.5	(37)	15.6	(5)
26-30	9.7	(42)	9.4	(3)
31-35	12.4	(54)	18.8	(6)
36-40	12.9	(56)	9.4	(3)
41-45	14.3	(62)	9.4	(3)
46-50	12.4	(54)	15.6	(5)
51-55	12.7	(55)	6.2	(2)
56-60	7.1	(31)	6.2	(2)
61-65	6.4	(28)	9.4	(3)
66-73	3.6	(15)	-	(-)
Claims reporting age	100.0	(434)	100.0	(32)
Don't know		(394)		(27)
Claims in sample		(828)[b]		(59)[b]
Measurements of central tendency		Years		Years
1. Arithmetic mean		43.5		39.9
2. Median		42.3		41.0

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[a] No claims in Gulf Area.

[b] Excludes death and property damage claims.

TABLE A-117
AMOUNT OF PAID LOSSES BY KIND OF PROTECTION AND INDEMNITY INSURANCE ACCIDENTS [a]

Area--Kind of accident	Total amount of paid losses		Claims		Paid loss per claim
	Per cent	Thousand dollars	Per cent	Number	Dollars
I. New England					
1. Injury (excluding death)	75.8	(396.9)	79.5	(560)	$ 709
2. Sickness	5.5	(28.8)	17.8	(125)	231
3. Death	18.4	(96.4)	1.7	(12)	8,033
4. Other [b]	.3	(1.8)	1.0	(7)	260
All claims reporting amount	100.0	(523.9)	100.0	(704)	744
Don't know (no information on kind of accident)		(1.1)		(1)	1,102
Claims reporting loss paid		(525.0)		(705)	745
III. California					
I. Injury (excluding death)	90.9	(164.8)	93.0	(40)	$4,120
2. Sickness	9.1	(16.5)	7.0	(3)	5,500
3. Death	-	(-)	-	(-)	-
4. Other [b]	-	(-)	-	(-)	-
All claims reporting amount	100.0	(181.3)	100.0	(43)	4,216
Don't know (no information on kind of accident)		(7.3)		(3)	2,433
Claims reporting loss paid		(194.0)		(46)	4,217

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a/ No claims in Gulf Area.

b/ Includes property damage, loss of time and catch by illegal seizure and fines covered by protection and indemnity insurance.

TABLE A-118
AMOUNT OF PAID LOSSES FOR P & I INSURANCE ACCIDENTS BY CREW INVOLVED IN THE ACCIDENT

Area - Personnel and crew	Total amount of paid losses		Claims		Paid loss per claim
	Percent	Thousand dollar	Percent	Number	Dollars
I. New England					
1. Officer personnel	11.3	(55.2)	17.2	(101)	$546
2. Crew	88.7	(434.7)	82.8	(486)	894
All claims reporting amount	100.0	(489.9)	100.0	(587)	835
Don't know (no information and other than crew)		(35.1)		(118)	297
Claims reporting loss paid		(525.0)		(705)	745
II. Gulf Area a/					
III. California					
1. Officer personnel	6.1	(9.0)	24.3	(9)	$1,000
2. Crew	93.9	(139.3)	75.7	(28)	4,975
All claims reporting amount	100.0	(148.3)	100.0	(37)	4,008
Don't know (no information and other than crew)		(45.7)		(9)	5,078
Claims reporting loss paid		(194.0)		(46)	4,217

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a/ No claims in Gulf Area.

TABLE A-119
AMOUNT OF PAID LOSS
BY MONTHS ELAPSING BETWEEN CLAIM AND PAYMENT OF LOSS
FOR PROTECTION AND INDEMNITY INSURANCE ACCIDENTS

Waiting period (months)	Total amount of paid loss		Claims reporting		Paid loss per claim (Dollars)
	Percent	(Thousand dollars)	Percent	Number	
New England					
One or less	4.6	(22.9)	25.1	(156)	$147
Two	3.6	(18.2)	16.2	(101)	180
Three	2.1	(10.3)	10.3	(64)	161
Four	2.4	(12.2)	8.5	(53)	230
Five to six	9.4	(47.0)	11.1	(69)	681
Seven to ten	12.1	(60.3)	12.5	(78)	773
Eleven to twenty-two	21.6	(107.9)	11.1	(69)	1,564
Twenty-three or more	44.2	(220.7)	5.2	(32)	6,896
Claims reporting waiting period-paid loss	100.0	(499.5)	100.0	(622)	803
Don't know (no information on waiting period)		(25.5)		(83)	307
Claims reporting loss paid		(525.0)		(705)	745
I. **Gulf Area**[a]					
II. **California**					
Three or less	3.0	(5.8)	33.3	(15)	$385
Four to six	4.3	(8.3)	20.0	(9)	922
Seven to twenty-two	20.7	(40.1)	28.9	(13)	3,086
Twenty-three or more	72.0	(139.1)	17.8	(8)	17,391
Claims reporting waiting period-paid loss	100.0	(193.3)	100.0	(45)	4,296
Don't know (no information on waiting period)		(.7)		(1)	700
Claims reporting loss paid		(194.0)		(46)	4,217

No claims in Gulf Area.

TABLE A - 120
CUMULATIVE DISTRIBUTION
OF AMOUNT OF PAID LOSS AND NUMBER OF CLAIMS BY MONTHS ELAPSING BETWEEN CLAIM AND PAYMENT OF LOSS FOR PROTECTION AND INDEMNITY INSURANCE ACCIDENTS

WAITING PERIOD (months)	TOTAL AMOUNT OF PAID LOSS (in thousand dollars)				CLAIMS REPORTING			
	No more than		No less than		No more than		No less than	
	Per-cent	Amount	Per-cent	Amount	Per-cent	Number	Per-cent	Number
1. New England								
One or less	4.6	(22.9)	100.0	(499.5)	25.1	(156)	100.0	(622)
Two	8.2	(41.1)	95.4	(476.6)	41.3	(257)	74.9	(466)
Three	10.3	(51.4)	91.8	(458.4)	51.6	(321)	58.7	(365)
Four	12.7	(63.6)	89.7	(448.1)	60.1	(374)	48.4	(301)
Five to six	22.1	(110.6)	87.3	(435.9)	71.2	(443)	39.9	(248)
Seven to ten	34.2	(170.9)	77.9	(388.9)	83.8	(521)	28.8	(179)
Eleven to twenty-two	55.8	(278.8)	65.8	(328.6)	94.9	(590)	16.2	(101)
Twenty-three or more	100.0	(499.5)	44.2	(220.7)	100.0	(622)	5.1	(32)
11. Gulf Area[a]								
111. California								
Three or less	3.0	(5.8)	100.0	(193.3)	33.3	(15)	100.0	(45)
Four to six	7.3	(14.1)	97.0	(187.5)	53.3	(24)	66.7	(30)
Seven to twenty-two	28.0	(54.2)	92.7	(179.2)	82.2	(37)	46.7	(21)
Twenty-three or more	100.0	(193.3)	72.0	(139.1)	100.0	(45)	17.8	(8)

[a] No claims in Gulf Area.

TABLE A - 121
AMOUNT OF PAID LOSS FOR P & I INSURANCE ACCIDENTS BY THE AGE OF PERSON INVOLVED IN THE ACCIDENT

AGE OF PERSON INVOLVED IN ACCIDENT (in years)	TOTAL AMOUNT OF PAID LOSS		CLAIMS REPORTING		PAID LOSS PER CLAIM
	Per-cent	Thousand Dollars	Per-cent	Number	Dollars
1. New England					
17 to 30	5.1	($19.3)	18.0	(70)	$ 276
31 to 40	26.8	(100.9)	26.4	(103)	980
41 to 50	38.8	(146.1)	27.4	(107)	1,365
51 to 60	17.1	(64.5)	19.0	(74)	872
61 to 73	12.2	(45.9)	9.2	(36)	1,275
Claims reporting age	100.0	(376.7)	100.0	(390)	709
Don't know (no information on age of injured or sick person)					
Claims reporting loss paid		(148.3) (525.0)		(315) (705)	471 745
11. Gulf Area a/					
11. California					
18 to 40	44.8	($17.8)	50.0	(11)	1,618
41 to 65	55.2	(21.9)	50.0	(11)	1,991
Claims reporting age	100.0	(39.7)	100.0	(22)	1,804
Don't know (no information on age of injured or sick person		(154.3)		(24)	6,429
Claims reporting loss paid		(194.0)		(46)	4,217

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a/ No claims in Gulf Area.

TABLE A - 122
CUMULATIVE DISTRIBUTION
OF AMOUNT OF PAID LOSS FOR PROTECTION AND INDEMNITY INSURANCE ACCIDENTS
BY THE AGE OF PERSON INVOLVED IN THE ACCIDENT

AGE OF PERSON INVOLVED IN ACCIDENT (in years)	TOTAL AMOUNT OF PAID LOSS (in thousand dollars)				CLAIMS REPORTING			
	No more than		No less than		No more than		No less than	
	Per-cent	Amount	Per-cent	Amount	Per-cent	Number	Per-cent	Number
1. New England								
17 to 30	5.1	($19.3)	100.0	($376.7)	18.0	(70)	100.0	(390)
31 to 40	3.19	(120.2)	93.0	(357.4)	44.4	(173)	82.0	(320)
41 to 50	70.7	(266.3)	56.6	(256.5)	71.8	(280)	55.6	(217)
51 to 60	87.8	(330.8)	39.9	(110.4)	90.8	(354)	28.2	(110)
61 to 73	100.0	(376.7)	16.6	(45.9)	100.0	(390)	9.2	(36)
11. Gulf Area a/	-							
111. California								
18 to 40	44.8	($17.8)	100.0	($ 39.7)	50.0	(11)	100.0	(211)
41 to 65	100.0	(39.7)	55.2	(21.9)	100.0	(21)	50.0	(11)

a/No claims in Gulf Area.

TABLE A - 123
NUMBER OF CLAIMS AND AMOUNT OF PAID LOSS FOR PROTECTION AND INDEMNITY INSURANCE ACCIDENTS BY MANNER CLAIM WAS SETTLED

AREA - MANNER CLAIM WAS SETTLED	TOTAL AMOUNT OF PAID LOSS		CLAIMS REPORTING		PAID LOSS PER CLAIM
	Percent	Thousand Dollars	Percent	Number	Dollars
1. New England					
1. Without litigation	31.8	($151.3)	91.1	(564)	$ 268
2. With litigation	68.2	(323.9)	8.9	(55)	5,889
Claims reporting manner of settlement	100.0	(475.2)	100.0	(619)	768
Don't know (no information on manner of claim settlement)		(49.8)		(86)	579
Claims reporting loss paid		(525.0)		(705)	745
11. Gulf Area [a]					
111. California					
1. Without litigation	24.0	($46.6)	73.9	(34)	1,371
2. With litigation	76.0	(147.4)	26.1	(12)	12,283
Claims reporting manner of settlement	100.0	(194.0)	100.0	(46)	4,217
Don't know (no information on manner of claim settlement)		(-)		(-)	-
Claims reporting loss paid		(194.0)		(46)	4,217

a/No claims in Gulf Area.

TABLE A - 124

AMOUNT CLAIMED, AMOUNT OF PAID LOSS, AND PAID EXPENSES FOR PROTECTION AND INDEMNITY INSURANCE ACCIDENTS[a]

ITEM	1. NEW ENGLAND Amount Thousand dollars	Claims reporting	111. CALIFORNIA Amount Thousand dollars	Claims reporting
1. Claimed and paid amount of loss				
1. Claimed losses	$900.5	(271)	$172.1	(18)
2. Paid losses	388.9	(271)	52.6	(18)
3. Paid - claimed loss ratio	(43.2)	-	(30.6)	-
11. Paid losses & expenses				
1. All paid losses	$525.0	(705)	$194.0	(46)
2. Paid losses reporting paid expenses	429.4	(404)	181.2	(35)
3. Paid expenses	83.8	(404)	33.2	(35)
4. Expense - all paid losses ratio	(16.0)	-	(17.1)	-
5. Expense - paid losses reporting expense ratio	(19.5)	-	(18.3)	-
111. Distribution of claim expenses				
1. All expenses	$83.8	(404)	$33.2	(35)
2. Lawyer's fee	69.3	(267)	23.5	(24)
3. Other court expenses	.8	(11)	.3	(4)
4. Other claim expenses	7.5	(141)	8.6	(21)
5. Lawyer's fee - all claim expense ratio	(82.7)	-	(70.8)	(-)

TABLE A - 125
AMOUNT CLAIMED, PAID LOSS, AND LAWYER'S FEE OF CLAIMS FOR P & I INSURANCE ACCIDENTS a/

ITEM	Claims reporting claimed loss paid loss, and lawyer's foo (amount in thousand dollars)		Claims reporting paid loss and lawyer's fee (amounts in thousand dollars)	
	NEW ENGLAND	CALIFORNIA	NEW ENGLAND	CALIFORNIA
1. Claimed loss	$679.4	$134.1	-	-
2. Paid loss	319.3	31.4	$ 369.4	$165.4
3. Lawyer's fee	55.8	9.5	69.3	23.9
4. Paid -- claimed loss ratio	(47.0)	(23.4)	-	-
5. Lawyer's fee -- claimed loss ratio	(8.2)	(7.1)	-	-
6. Lawyer's fee -- paid loss ratio	(17.5)	(80.3)	(18.8)	(14.4)
Number of claims reporting	(162)	(10)	(267)	(25)

a/ No claims in Gulf Area.

TABLE A - 126
PROTECTION AND INDEMNITY INSURANCE ACCIDENTS BY AVERAGE AGE OF PERSON INVOLVED IN THE ACCIDENT

AREA - KIND OF ACCIDENT	AGE OF PERSON IN YEARS		CLAIMS REPORTING AGE	
	Arithmetic mean	Median	Per-cent	Number
I. New England				
1. Injury (excluding death)	42.2	41.3	80.3	(313)
2. Sickness	45.4	45.0	17.2	(67)
3. Death	46.9	42.0	2.5	(10)
Claims reporting kind of accident and age of injured person	43.5	42.3	100.0	(390)
Don't know				(454)
Claims in sample				(844)
II. Gulf Area a/				
III. California				
1. Injury (excluding death)	40.7	41.5	100.0	(21)
2. Sickness	-	-	-	-
3. Death	-	-	-	-
All claims reporting age of person	39.9	41.0	100.0	(21)

a/No claims in Gulf Area.

TABLE A - 127
PROTECTION AND INDEMNITY INSURANCE ACCIDENTS OF VESSELS CLASSIFIED ON THE BASIS OF PAID LOSS RECORD

AREA - KIND OF ACCIDENT	Vessels with best loss record a/		Vessels with worst loss record b/		All reporting vessels	
	Per-cent	No.	Per-cent	No.	Per-cent	No.
I. New England						
1. Injury (excluding death)	12.2	(79)	87.8	(571)	100.0	(650)
2. Sickness	8.3	(12)	91.7	(132)	100.0	(144)
3. Death	-	(-)	-	(14)	100.0	(14)
4. Other c/	-	(2)	-	(9)	100.0	(11)
Total reporting	11.4	(93)	88.6	(726)	100.0	(819)
Don't know	-	(3)	-	(22)	-	(25)
All accidents in sample:	11.4	(96)	88.6	(748)	100.0	(844)
II. Gulf Area d/						
III. California						
1. Injury (excluding death)	5.7	(3)	94.3	(50)	100.0	(53)
2. Sickness	-	(1)	-	(5)	100.0	(6)
3. Death	-	(-)	-	(2)	100.0	(2)
4. Other c/	-	(-)	-	(3)	100.0	(3)
Total reporting	6.3	(4)	93.7	(60)	100.0	(64)
Don't know	-	(-)	-	(-)	-	-
All accidents in sample:	6.3	(4)	93.7	(60)	100.0	(64)

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a/ Fifty per cent of vessels with no or smallest paid losses per policy year studied.

b/ Fifty per cent of vessels with largest paid losses per policy year studied.

c/ Includes property damage, loss of time and catch by illegal seizure and fines covered by protection and indemnity insurance.

d/ No claim in Gulf Area.

TABLE A - 128
MONTHS ELAPSING BETWEEN CLAIM AND PAYMENT OF LOSS FOR P & I INSURANCE ACCIDENTS BY AMERICAN AND ALIEN INSURERS

WAITING PERIOD (months)	I. NEW ENGLAND				II. CALIFORNIA			
	American Insurers		Alien Insurers		American Insurers		Alien Insurers	
	Per-cent	No.	Per-cent	No.	Per-cent	No.	Per-cent	No.
One or less	35.7	(90)	17.9	(66)	-	(4)	-	(3)
Two	17.1	(43)	15.8	(58)	-	(3)	-	(-)
Three	9.5	(24)	10.4	(39)	-	(3)	-	(2)
Four	6.7	(17)	9.3	(34)	-	(2)	-	(-)
Five to six	7.2	(18)	13.9	(51)	-	(5)	-	(1)
Seven to ten	8.0	(20)	15.8	(58)	-	(4)	-	(2)
Eleven to twenty-two	9.5	(24)	12.0	(44)	-	(5)	-	(2)
Twenty-three or more	6.3	(16)	4.9	(18)	-	(3)	-	(4)
Claims reporting waiting period	100.0	(252)	100.0	(368)	100.0	(29)	100.0	(14)
Don't know		(36)		(49)		(2)		(1)
Paid claims in sample		(288)		(417)		(31)		(15)

Measurements of central tendency	Months	Months	Months	Months
1. Arithmetic mean	5.9	5.6	9.9	11.6
2. First quartile	.8	1.4	-	-
3. Second quartile (median)	1.9	3.6	5.3	8.5
4. Third quartile	9.5	7.6	-	-

A-129

VESSEL OWNER'S FAVORABLE OR UNFAVORABLE OPINION OF INSURANCE AGENTS-BROKERS AND INSURANCE COMPANIES

Favorable vs. unfavorable opinion	Insurance Agents-Brokers		Insurance Companies	
	Percent	Number	Percent	Number
I. New England				
1. Favorable	33.3	(18)	24.3	(17)
2. Unfavorable	66.7	(36)	75.7	(53)
Total reporting	100.0	(54)	100.0	(70)
Don't know or not classifiable		(10)		(36)
Total sample		(64)		(106)
II. Gulf Area				
1. Favorable	66.2	(49)	37.8	(28)
2. Unfavorable	33.8	(25)	62.2	(46)
Total reporting	100.0	(74)	100.0	(74)
Don"t know or not classifiable		(11)		(22)
Total sample		(85)		(96)
III. California				
1. Favorable	86.0	(49)	66.7	(36)
2. Unfavorable	14.0	(8)	33.3	(18)
Total reporting	100.0	(57)	100.0	(54)
Don't know or not classifiable		(8)		(15)
Total sample		(65)		(69)

TABLE A-130
VESSEL OWNER'S RESPONSE TO QUESTION:
WHAT SHOULD THE GOVERNMENT DO TO SOLVE THE INSURANCE PROBLEMS?

Answer	I. New England		II. Gulf Area		III. Californ	
	Percent	Number	Percent	Number	Percent	Numb
A. General response						
1. Government should do something for the fishing industry	93.3	(167)	75.4	(107)	94.7	(17
2. Government should keep its hands off the industry	6.7	(12)	24.6	(35)	5.3	(1
Total reporting	100.0	(179)	100.0	(142)	100.0	(18
Don't know or not classifiable		(7)		(16)		(1
Total sample		(186)		(158)		(19
B. Major suggestions for Government action						
1. Repeal of the Jones Act and/or of present court system	20.2	(48)	3.9	(5)	2.5	(
2. Control fish imports support prices, increase demand for domestic fish.	8.0	(19)	12.5	(16)	25.3	(51
3. Regulate protection and indemnity (including introduction of workmen's compensation) and hull insurance (Government board to set up rates)	18.9	(45)	17.2	(22)	18.3	(37
4. Government subsidize or assist industry financially	24.8	(59)	18.0	(23)	27.2	(55
5. Other suggestions[a]	17.6	(42)	30.4	(39)	10.9	(22
6. In favor of Government action but no specific suggestions are made	10.5	(25)	18.0	(23)	15.8	(32
Total [b]	100.0	(238)	100.0	(128)	100.0	(202
Total sample [b]		(167)		(107)		(178

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[a] Includes the following: Government allow U.S. fishermen to use same mesh nets as Ic land and other countries; supervise port doctors and surveyors to reduce false clai investigate rates and repair charges; crew share paying protection and indemnity insurance premiums; educate officer personnel of vessels; Government enforce cooperat among boat owners; license engineers, captains, and owners; establish monthly coast guard inspection; encourage cooperative or group insurance; assure speedier broker service; consolidate state licensing to facilitate interstate fishing; close season for several months on lobster and shrimp and regulate dragging.

[b] Since a respondent may have made more than one suggestion for Government action, the sum total of suggestions exceeds total sample.

Table A-131
RELATION BETWEEN AVERAGE INSURANCE RATES, 1950-54, AND STRATIFYING CHARACTERISTICS OF VESSELS IN THE THIRD-STAGE SAMPLE

Stratifying variables	I. New England		II. Gulf Area		III. California	
	Insurance rate Percent	Number of vessels	Insurance rate Percent	Number of vessels	Insurance rate Percent	Number of vessels
Status						
Active	6.0	(116)	5.5	(74)	7.3	(88)
Lost	7.1	(11)	6.8	(4)	8.4	(8)
Material						
Wood (active)	6.4	(105)	5.7	(65)	7.4	(85)
Steel (active)	2.8	(11)	4.0	(9)	4.1	(3)
Age						
10 or younger	5.1	(26)	5.2	(47)	6.5	(39)
11 to 20	5.5	(58)	5.8	(24)	7.5	(37)
21 to 30	7.0	(27)	7.2	(3)	8.8	(18)
31 or older	8.7	(16)	7.8	(4)	10.3	(2)
	6.1	(127)	5.6	(78)	7.4	(96)
Gross tonnage						
40 or less	6.9	(47)	6.0	(38)	7.3	(24)
41 to 85	6.7	(41)	5.4	(35)	8.7	(14)
86 or more	4.6	(39)	3.8	(5)	7.1	(58)
	6.1	(127)	5.6	(78)	7.4	(96)

APPENDIX B

SAMPLING TECHNIQUES AND PROCEDURE

1. Initial Plan and Reasons for Their Revision

The initial plan. Tentative sampling plans in the contract provided for the study of about 1,000 insurance policies and their accident claims for hull insurance and an equal number for protection and indemnity insurance carried by commercial fishing vessels of 5 net tons or more for each of the two specified years, 1951 and 1954. The policies were to be drawn from no less than 10 insurers which have written hull insurance and no less than 5 insurers which have written protection and indemnity insurance. In addition, the contract specified the personal interviewing of about 500 owners of commercial fishing vessels of 5 net tons or more for each of the two years already mentioned. The randomly selected samples of policies and owners to be distributed among six major regions of the continental United States, namely New England, Middle Atlantic, Gulf Area (including South Atlantic), California, Pacific Northwest (Washington and Oregon states) and inland waters.

Reasons for revision of the initial plan. Early in the course of our preliminary investigation a number of serious obstacles appeared to prevent the completion of these contractual specifications to their fullest extent.

First, it was found that insurers often keep their accounts on commercial fishing vessels mixed with other accounts. Information about the kind of insurance carried by each vessel could not be obtained without a complete preliminary survey of the universe. The cost of obtaining such information about the universe for sampling purposes appeared, according to all estimates, prohibitive.

Second, officials of insurance companies expressed the firm opinion that no loss experience could be meaningful unless it covered a period of no less than five consecutive years.

Third, the most obvious interpretation of the contractual specifications required three types of samples (hull policies and their accident claims; protection and indemnity policies and their claims, and vessel owners) drawn independently. If sampling had been carried out on this basis, no correlation of data of each sample with data of the two other types of samples would have been feasible or easily arranged.

Fourth, our preliminary inquiry disclosed that the physical characteristics of the commercial fishing vessels, their fishing operations, and other variables important from the viewpoint of insurance experience differed markedly from area to area.

Fifth, it became evident that insurance experience is likely to be affected sometimes profoundly, by non-qualitative factors.

2. Sample Design

Requirements for a sample design. It was recognized that a sample design for a study of insurance experience of commercial fishing vessels should fulfill the following requirements.

First, the design should be flexible enough to allow continuous revision of plans in order to meet effectively unforeseen difficulties and keep costs to a minimum without seriously impairing reliability.

Second, the sample-unit should be the commercial fishing vessel. Information about insurance experience should be collected by interviewing the vessel owner and studying the insurance record of the sampled commercial fishing vessels in each specified region. Whether a vessel carried insurance or not was necessarily a part of the study.

Third, for satisfactory results on claim experience the vessel population should include all active and lost vessels for the years 1950-1954.

Fourth, the need for a qualitative analysis required emphasis on depth investigation of cases (sample-units) while statistical measurements of precision should be considered to have limited applicability.

The final sample design. In view of the above requirements, a sample was designed which provided for area-multiple-stage stratified sampling of commercial fishing vessels in order to study insurance experience for a five-year period, from 1950-through 1954. Randomization was applied in the selection of sample-units in so far as feasible and investigation of the New England situation was to be used as a quasi-pilot study. The new sample design was recommended to the Fish and Wildlife Service of the U. S. Department of the Interior and subsequently approved by the Bureau of the Budget.

Sampling on this basis involved the following major steps:

(a) Selection of the statistical universe. The sample-unit of the population was defined as a vessel which (1) was of 5 net tons or more; (2) was active or lost during the period from January 1, 1950 to January 1, 1955; (3) was engaged in catching fish or shellfish for commercial purposes; (4) was registered in any port located in the specified regions; and (5) whose ownership did not change during the five-year period.

From the annual listing of Merchant Vessels of the United States, Bureau of Customs, U. S. Treasury Department, vessels of 5 net tons or more which were active as of January 1, 1955, which had as port of registration any port located in the six regions, and whole service was fishing, cod fishing, or oystering were selected. Vessels belonging to the sixth region, Inland Waters, were merged with the Middle Atlantic Area. Then, in order to meet the above-mentioned definitional characteristics the initially available universe underwent a number of amendations. First, the universe was augmented with vessels which were lost during the period from January 1, 1950, to January 1, 1955. Second, the vessel population was checked against the records of the Fish and Wildlife Service and any vessel which had not landed at least one commercial catch of fish or shellfish during the year 1953 was excluded. Third, after the samples had been drawn at random the available records were checked and vessels whose ownership changed during 1950-54 were eliminated. (Substitution for change of ownership was made in the Gulf Area and California samples only.) Vessels from the same stratum were substituted for ones disqualified. Fourth, any vessel which during interviewing was found to be engaged in service other than commercial fishing, such as, sport fishing, was disqualified and a substitute vessel from the same stratum was interviewed.

Despite these amendations, the statistical universe may have fallen a little short of a 100 percent coverage of the sample-units. This situation may be attributed to the relative ease with which a vessel may enter or leave commercial fishing for other maritime activities. Field work experience has substantiated the original assurance of the Fish and Wildlife Service that the number of such vessels was relatively small.

(b) Sample size and standard error. A sample of 1,500 commercial fishing vessels was distributed among the five geographical areas, New England, Middle Atlantic, Gulf Area, California, and Pacific Northwest on the basis of a minimum of 200 sample-units for each area and the distribution of the remaining 500 sample-units in proportion to the vessel population in each area. (See table B-1 in later pages of this appendix). After the interviewing of the New England vessel owners in the sample was almost completed, costs limited the survey to the study of the insurance experience in New England, the Gulf Area, and California. The sample size for New England and California remained the same, 251 and 288 sample-units respectively. The Gulf Area was redefined to exclude the South Atlantic Fisheries, and the original sample size of 389 sample-units was reduced to 225 vessels.

Assuming a parameter percentage of 50 percent, i.e., only 50 percent of the universe carrying insurance of either kind, and applying the formula $E = 100 \sqrt{\frac{6.66 \times p \times q}{N}}$ the error is 9.1 percent for 200, 8.2 for 250 and 7.5 for 300 sample-units within 100 to 1 certainty limits.

(c) First-stage sampling involved the selection of a number of home ports in each area (except California) with a combined vessel registration of no less than 84.0 percent of the statistical universe. In this manner, fifteen New England home ports and nine in the Gulf Area were excluded from final sampling, thus reducing considerably the cost of field work. (For first-stage sampling see tables B-2 and B-3 in later pages of this appendix.)

(d) Second-stage sampling consisted of drawing a stratified random sample of 251 vessels for New England, 225 for the Gulf Area and 288 for California from the first-stage sample. This was done as follows: First, the vessel population in each area was stratified on the basis of four variables: (a) active or lost vessels; (b) material, i.e., wood or steel vessels; (c) age of vessels; and (d) gross tonnage. Second, the stratified quotas of each sample were determined by multiplying the size of each sample by the ratio of each stratum to the universe. Finally, a sample larger in size than the one required in each quota was drawn at random from each first-stage sample (For determination of stratified quotas of the second-stage sample of vessels see tables B-4 of this appendix.) The larger sample size than the one required was drawn in order to allow substitution of vessels because of no response from the vessel owner, change of ownership, or for vessels which did not qualify for interviewing because of service other than commercial fishing. Trained personnel interviewed the vessel owner of each vessel included in the second-stage sample.

(e) Third-stage sampling. The revised sample design provided for the study of no less than 50 percent of the total number of years that the vessels in the second-stage samples had been insured from 1950 through 1954. The study of insurance files was conducted on the basis of availability and accessibility of insurance records among leading agents and firms in each area. The number of insurance policy-years studied in each area by kind of insurance appear in table B-5 of this appendix. The 50 percent minimum quotas were filled for all cases except for protection and indemnity policy years in the Gulf Area. In the latter case insurance records were not available or, if available, were not easily accessible. Trained personnel studied the insurance files and recorded the information on a detailed schedule.

3. Interview Schedules, Interview Instructions and Field Work.

A considerable amount of preliminary work was required for the construction of the interview schedules because of lack of information on the subject. Several revisions of the interview schedules were made after each pretesting. Schedule A: Face Sheet was designed to record information readily obtainable from the listing of Merchant Vessels of the United States on the physical characteristics of the vessel. Information on the vessel's fishing operations and other data which were expected to be related to insurance experience were incorporated in Schedule B: Owners Data. Experience on hull insurance and protection and indemnity insurance were recorded on Schedules C and D, respectively.

The field work of interviewing the owners of the New England
essels in the second-stage sample was conducted in May of 1956, earlier
han in the Gulf Area and California. Field work supervisors were trained
y interviewing vessel owners in Boston. Subsequently each field work
upervisor was assigned to a New England port to obtain and train inter-
iewers, supervise the interviewing, conduct local research, and submit a
eport of his findings. The interviewing of vessel owners in the Gulf Area
nd in the California Area began early in June of 1956 under the direction
f the same supervisors who carried out the field work in New England. Late
n June the study of insurance files of the New England vessels in the third-
tage sample was begun. Field work supervisors were trained with the insurance
ecords available at Boston insurers and insurance agents. With the aid of
ocally recruited assistants, these field work supervisors then continued to
ollect information on insurance experience from no less than 50 insurance
irms and agents located in Gloucester and New Bedford, Massachusetts; New
ork, New York; Philadelphia, Pennsylvania; New Orleans, Louisiana; Houston,
exas; Los Angeles, San Diego and San Francisco, California.

Early field work in the New England Area offered a number of advantages. Reliable, competent, and well trained personnel were given the responsibility of supervising field work in the other areas. Interview schedules and instructions were tested. Finally, cost estimates for the whole study were made in the light of difficulties encountered in New England.

4. Sample validation.

A number of correlations and chi-square analyses were made to test the following: (a) whether first-stage sampling has affected significantly the representativeness of the second-stage samples; (b) the assumption that the stratifying variables are correlated with the subject under study--insurance experience; (c) the representativeness of the second-stage samples; and (d) the representativeness of the third-stage samples.

(a) First-stage samples. The exclusion of a number of home ports in New England and the Gulf Area through first-stage sampling does not seem to have affected significantly the representativeness of the second-stage samples. First, the findings indicate that during 1950-54 the vessels in the second-stage samples had used for fish landings a large number of ports in each area (26 in New England, 39 in Gulf, 14 in California), including the home ports which were eliminated through first-stage sampling. Second, stratification of the second-stage samples was based on the stratifying characteristics of the initial universe, not of the first-stage sample. Finally, chi-square analysis of the second-stage samples leads to the same conclusion. (See table B-8 of this appendix.)

(b) Correlation of stratifying variables. The assumption that the stratifying variables are correlated with insurance experience is substantiated by the findings. First, the average insurance rate for active vessels is lower than the rate for lost vessels by

1 percent or more in all three areas. Second, the average insurance rate for active-wood vessels is higher than the rate for active vessels made of steel by 1.7 percent or more in all three areas. (See table B-7 of this appendix for these two findings.) Third, age of vessel is directly and gross tonnage of vessel inversely correlated with average insurance rates. Several calculations confirming this were made by the staff. Correlation in both cases is low because many other factors determine insurance rates besides age and gross tonnage. The presence of correlation is better demonstrated by the average insurance rate of vessels distributed in a frequency by age and gross tonnage shown in table B-7 of Section II. Correlation is more pronounced for age. For vessels of less than 86 gross tons, correlation is low in New England and Gulf Area, while direct correlation is evidenced in California. For larger vessels correlation is inverse for all three areas. Inasmuch as a demonstration of the presence of such relationship justifies the use of these variables for stratification purposes no attempt has been made to measure the degree of correlation.

(c) Second-stage samples. Chi-square analyses of second-stage samples by age and gross tonnage have produced probability values (p) for all areas greater than a 0.01 criterion of significance. These probability values show that the deviations of these samples from the universe with regard to age and gross tonnage of vessels are due to chance error alone (table B-8 of this appendix.)

(d) Third-stage samples. Chi-square analyses of third-stage samples by age and tonnage has produced probability values for all areas greater than the critical p = 0.01 level. Thus, the null hypothesis has not been impugned and the representativeness of these samples has been demonstrated. (table B-9)

Conclusion: The qualitative aspects of insurance experience and the presence of correlation between the stratifying variable and average insurance rates require that Type I errors should be as few as possible. In other words, showing that the difference between the samples and the universe is not significant is more important than showing that this difference is significant. Therefore, P = 0.01 as a criterion of significance may be considered sufficient and we may conclude that all second-stage and third-stage samples are reliable representatives of the statistical populations from which they have been drawn.

TABLE B - 1

DETERMINATION OF THE SAMPLE SIZE OF VESSELS FOR EACH GEOGRAPHICAL AREA [a]

Geographical area	Vessel Population		Distribution of total sample of 1500 vessels		Sample size cols. 3 and 4	
	Vessels (1)	Percent (2)	Minimum Sample size (3)	Proportional to vessel population (4)	Vessel (5)	Percent (6)
I New England	873	(10.2)	200	51	251	(16.7)
II Middle Atlantic	1,151	(13.5)	200	68	268	(17.9)
III Gulf Area	3,220	(37.8)	200	189	389	(25.9)
IV California	1,497	(17.6)	200	88	288	(19.2)
V Pacific Northwest	1,783	(20.9)	200	104	304	(20.3)
Total	8,524	100.0	1,000	500	1,500	(100.0)

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[a] After the original sample design was approved, the survey was confined to the study of the insurance experience in New England, the Gulf Area and California. The sample size for New England and California remained unchanged. Since the new definition of the Gulf Area excluded the South Atlantic Fisheries, the original sample size of 389 vessels for this area was reduced to 225 vessels.

TABLE B - 2

FIRST - STAGE SAMPLING OF VESSELS

FOR EACH GEOGRAPHICAL AREA

Geographical area	Number of ports of vessel registration			Vessel population registered at		First-stage sample as percent of universe cols. 5 ÷ 4
	Total (1)	Excluded (2)	Selected (3)	All ports (4)	Selected ports (5)	(6)
I New England	22	15	7	873	736	84.3
II Gulf Area a/	16	9	7	2,197	1,863	84.8
III California	4	0	4	1,497	1,497	100.0
Total	42	24	18	4,567	4,096	89.7

a/ The newly defined Gulf Area includes all home ports from Key West, Florida to Brownsville, Texas.

B - 3, NEW ENGLAND

DISTRIBUTION OF THE FIRST - STAGE SAMPLE OF VESSELS BY SELECTED PORTS OF REGISTRATION

Port of Registration[a]	Active[b]		Lost[c]		Total[d]	
	Percent	Vessels	Percent	Vessels	Percent	Vessels
1 Boston, Mass.	16.2	(108)	10.0	(7)	15.6	(115)
2 Gloucester, Mass.	23.9	(159)	40.0	(28)	25.4	(187)
3 New Bedford, Mass.	26.3	(175)	30.0	(21)	26.6	(196)
4 New London, Conn.	7.8	(52)	4.3	(3)	7.5	(55)
5 Plymouth, Mass.	7.6	(51)	5.7	(4)	7.5	(55)
6 Portland, Maine	9.3	(62)	7.1	(5)	9.1	(67)
7 Rockland, Maine	8.9	(59)	2.9	(2)	8.3	(61)
Total	100.0	(666)	100.0	(70)	100.0	(736)

[a] The following 15 home ports were originally in the New England Area but they have been eliminated by the first-stage sample: Bangor, Maine; Bar Harbor, Maine; Bath, Maine; Belfast, Maine; Bridgeport, Connecticut; Calais, Maine; Eastport, Maine; Fall River, Massachusetts; Hartford, Connecticut; Jonesport, Maine; New Haven, Connecticut; Newport, Rhode Island; Portsmouth, New Hampshire; Providence, Rhode Island; Salem, Massachusetts.

[b] Active vessels represent 83 percent of an 801 active vessel population in the area.

[c] Lost vessels represent 97 percent of a 72 lost vessel population in the area.

[d] Total vessels represent 84 percent of an 873 total vessel population in the area.

TABLE B - 3, GULF AREA

DISTRIBUTION OF THE FIRST-STAGE SAMPLE OF VESSELS BY SELECTED PORTS OF REGISTRATION

Port of Registration[a]	Active[b] Percent	Active[b] Vessel	Lost[c] Percent	Lost[c] Vessels	Total[d] Percent	Total[d] Vessels
1 Biloxi, Mississippi	13.2	(227)	2.7	(4)	12.4	(231)
2 Brownsville, Texas	11.5	(197)	17.1	(25)	11.9	(222)
3 Corpus Christi, Texas	11.5	(197)	4.1	(6)	10.9	(203)
4 Galveston, Texas	9.2	(158)	15.1	(22)	9.7	(180)
5 Morgan City, La.	14.2	(243)	16.4	(24)	14.3	(267)
6 New Orleans, La.	29.1	(500)	28.1	(41)	29.0	(541)
7 Tampa, Florida	11.3	(195)	16.5	(24)	11.8	(219)
Total	100.0	(1717)	100.0	(146)	100.0	(1863)

[a] The original sample design included all seaports located in South Atlantic. The final approved sample excluded these seaports and was confined to the vessel population which has had as place of registration a seaport located in the Gulf Area only. Furthermore, the following 9 home ports were originally in the redefined Gulf Area, but they have been eliminated by the first-stage sample: Apalachicola, Florida; Baton Rouge, Louisiana; Beaumont, Texas; Gulfport, Mississippi; Houston, Texas; Key West, Florida; Mobile, Alabama; Pensacola, Florida, and Port Arthur, Texas.

[b] Active vessels represent 84.3 percent of a 2,038 active vessel population in the area.

[c] Lost vessels represent 91.8 percent of a

TABLE B - 3, CALIFORNIA

DISTRIBUTION OF THE FIRST-STAGE SAMPLE OF VESSELS BY SELECTED PORTS OF REGISTRATION a/

	Port of Registration	Active Percent	Vessels	Lost Percent	vessels	Total Percent	Vessels
1	Eureka, California	9.8	(133)	5.6	(8)	9.4	(141)
2	Los Angeles, California	36.5	(494)	35.7	(51)	36.4	(545)
3	San Diego, California	22.0	(298)	36.3	(52)	23.4	(350)
4	San Francisco, Calif.	31.7	(429)	22.4	(32)	30.8	(461)
	Total	100.0	(1,354)	100.0	(143)	100.0	(1,497)

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a/ Since no port of vessel registration was eliminated, the first-stage sample of vessels includes the total vessel population of the California Fisheries.

TABLE B-4, NEW ENGLAND

DETERMINATION OF STRATIFIED QUOTAS OF THE SECOND-STAGE SAMPLE OF VESSELS

Stratum number (1)	Status (2)	Stratifying characteristics Material (3)	Age (4)	Gross tonnage (5)	Universe Percent (6)	Vessels[a] (7)	Vessel quotas in second-stage sample[b] (8)
1	Active	Wood	Under 17	Under 43	21.9	(190)	55
2	"	"	"	Over 42	21.2	(184)	53
3	"	"	Over 16	Under 27	21.7	(188)	55
4	"	"	"	Over 26	21.6	(187)	54
5	"	Steel	Under 12	Under214	1.3	(11)	3
6	"	"	"	Over 213	1.3	(11)	3
7	"	"	Over 11	Under171	1.3	(11)	3
8	"	"	"	Over 170	1.4	(12)	4
9	Lost	Wood	Under 25	Under 31	2.0	(17)	5
10	"	"	"	Over 30	2.0	(17)	5
11	"	"	Over 24	Under 36	2.1	(18)	5
12	"	"	"	Over 35	2.2	(20)	6
					100.0	(866)	251

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a/ Seven vessels were excluded from a 873 vessel population in the area because their age was unknown.

b/ The second-stage or final sample was obtained by multiplying the size of the sample (251) by the percent of each stratum of the universe (col. 6).

TABLE B-4, GULF AREA

DETERMINATION OF STRATIFIED QUOTAS OF THE SECOND-STAGE SAMPLE OF VESSELS

Stratum number (1)	Status (2)	Stratifying characteristics Material (3)	 Age (4)	 Gross tonnage (5)	Universe Percent (6)	 Vessels a/ (7)	Vessel quotas in second-stage sample b/ (8)
1	Active	Wood	Under 10	Under 33	20.0	(436)	45
2	"	"	"	Over 32	20.2	(441)	46
3	"	"	Over 9	Under 20	24.0	(522)	54
4	"	"	"	Over 19	24.0	(521)	54
5	"	Steel	Under 7	Under 76	1.1	(24)	2
6	"	"	"	Over 75	1.1	(25)	2
7	"	"	Over 6	Under 66	1.3	(28)	3
8	"	"	"	Over 65	1.3	(28)	3
9	Lost	Wood	Under 10	Under 42	1.5	(33)	3
10	"	"	"	Over 41	1.5	(33)	3
11	"	"	Over 9	Under 19	2.0	(44)	5
12	"	"	"	Over 18	2.0	(44)	5
				Total	100.0	(2179)	225

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a/ Eighteen vessels were excluded from a 2,197 vessel population in the area because their age was unknown.

b/ The second-stage or final sample was obtained by multiplying the size of the sample (225) by the percent of each stratum of the universe (col. 6).

TABLE B-4, CALIFORNIA

DETERMINATION OF STRATIFIED QUOTAS OF THE SECOND-STAGE SAMPLE OF VESSELS

Stratum number (1)	Stratifying characteristics				Universe		Vessel quotas in second-stage sample [b] (8)
	Status (2)	Material (3)	Age (4)	Gross tonnage (5)	Percent (6)	Vessels [a] (7)	
1	Active	Wood	Under 12	Under 16	23.3	344	67
2	"	"	"	Over 15	22.2	327	64
3	"	"	Over 11	Under 16	20.6	303	59
4	"	"	"	Over 15	20.0	294	57
5	"	Steel	Under 9	Under 87	1.3	19	4
6	"	"	"	Over 86	1.3	19	4
7	"	"	Over 8	Under360	0.9	13	3
8	"	"	"	Over 359	0.8	12	2
9	Lost	Wood	Under 12	Under 18	2.2	32	7
10	"	"	"	Over 17	2.4	36	7
11	"	"	Over 11	Under 69	2.4	35	7
12	"	"	"	Over 67	2.6	38	7
					100.0	1,472	288

[a] Twenty-seven vessels were excluded from a 1,477 original vessel population because their stratifying characteristics were unknown.

[b] The second-stage sample was obtained by multiplying the size of the sample (288) by the percent of each stratum of the universe (col. 6).

TABLE B-5

NUMBER OF POLICY YEARS CONTRACTED BY SAMPLED VESSELS AND NUMBER OF POLICY YEARS STUDIED IN THE THIRD-STAGE SAMPLES

Item	New England samples		Gulf Area samples		California samples	
	Hull Insurance (1)	P & I Insurance (2)	Hull Insurance (1)	P & I Insurance (2)	Hull Insurance (1)	P & I Insurance (2)
1. Number of policy years contracted by owners of vessels in the second-stage samples	826	804	416	122	656	618
2. Number of policy years studied — third-stage samples	463	446	227	39	339	311
3. Policy years studied as per cent of policy years contracted Row 2 ÷ 1	56.1	55.5	54.6	32.0	51.7	50.3

TABLE B- 6, NEW ENGLAND

COMPARISON OF REQUIRED AND COMPLETED
STRATIFIED QUOTAS OF THE SECOND-STAGE SAMPLE OF VESSELS

Stratum number	Status	Stratifying characteristics			Stratified quotas		Over (+), under (-) required quota
		Material	Age	Gross tonnage	Required	Completed	
1	Active	Wood	Under 17	Under 43	55	54	-1
2	"	"	"	Over 42	53	52	-1
3	"	"	Over 16	Under 27	55	55	-
4	"	"	"	Over 26	54	51	-3
5	"	Steel	Under 12	Under 214	3	3	-
6	"	"	"	Over 213	3	3	-
7	"	"	Over 11	Under 171	3	3	-
8	"	"	"	Over 170	4	4	-
9	Lost	Wood	Under 25	Under 31	5	5	-
10	"	"	"	Over 30	5	5	-
11	"	"	Over 24	Under 36	5	6	+1
12	"	"	"	Over 35	6	10	+4
				Total sample	251	251	-

TABLE B-6, GULF AREA

COMPARISON OF REQUIRED AND COMPLETED STRATIFIED QUOTAS OF THE SECOND-STAGE SAMPLE OF VESSELS

Stratum number	Stratifying characteristics				Stratified vessel quotas		Over (+), under (-) required quota
	Status	Material	Age	Gross tonnage	Required	Completed	
1	Active	Wood	Under 10	Under 33	45	45	-
2	"	"	"	Over 32	46	46	-
3	"	"	Over 9	Under 20	54	54	-
4	"	"	"	Over 19	54	52	-2
5	"	Steel	Under 7	Under 76	2	2	-
6	"	"	"	Over 75	2	2	-
7	"	"	Over 6	Under 66	3	3	-
8	"	"	"	Over 65	3	3	-
9	Lost	Wood	Under 10	Under 42	3	3	-
10	"	"	"	Over 41	3	3	-
11	"	"	Over 9	Under 19	5	5	-
12	"	"	"	Over 18	5	7	+2
				Total sample	225	225	-

TABLE B-6, CALIFORNIA

COMPARISON OF REQUIRED AND COMPLETED STRATIFIED QUOTAS OF SECOND-STAGE SAMPLE OF VESSELS

Stratum number	Status	Stratifying characteristics			Stratified vessel quotas		Over (+), under (-) required quotas
		Material	Age	Gross tonnage	Required	Completed	
1	Active	Wood	Under 12	Under 16	67	66	-1
2	"	"	"	Over 15	64	64	-
3	"	"	Over 11	Under 16	59	59	-
4	"	"	"	Over 15	57	56	-1
5	"	Steel	Under 9	Under 87	4	4	-
6	"	"	"	Over 86	4	4	-
7	"	"	Over 8	Under 360	3	3	-
8	"	"	" 12	Over 359	2	2	-
9	Lost	Wood	Under 12	Under 18	7	9	+2
10	"	"	" 11	Over 17	7	7	-
11	"	"	Over 11	Under 69	7	6	-1
12	"	"	"	Over 67	7	8	+1
				Total sample	288	288	—

TABLE B-7

RELATIONSHIP BETWEEN AVERAGE INSURANCE RATES, 1950-54, AND STRATIFYING CHARACTERISTICS OF VESSELS IN THE THIRD-STAGE SAMPLE

Stratifying variables	New England Insurance rate Percent	New England Number of Vessels	Gulf Area Insurance rate Percent	Gulf Area Number of Vessels	California Insurance rate Percent	California Number of Vessels
Status						
Active	6.0	(116)	5.5	(74)	7.3	(88)
Lost	7.1	(11)	6.8	(4)	8.4	(8)
Material						
Wood (active)	6.4	(105)	5.7	(65)	7.4	(85)
Steel (active)	2.8	(11)	4.0	(9)	4.1	(3)
Age						
10 or younger	5.1	(26)	5.2	(47)	6.5	(39)
11 to 20	5.5	(58)	5.8	(24)	7.5	(37)
21 to 30	7.0	(27)	7.2	(3)	8.8	(18)
31 or older	8.7	(16)	7.8	(4)	10.3	(2)
	6.1	(127)	5.6	(78)	7.4	(96)
Gross tonnage						
40 or less	6.9	(47)	6.0	(38)	7.3	(24)
41 to 85	6.7	(41)	5.4	(35)	8.7	(14)
86 or more	4.6	(39)	3.8	(5)	7.1	(58)
Total	6.1	(127)	5.6	(78)	7.4	(96)

TABLE B-8

CHI-SQUARE ANALYSIS OF THE COMPLETED SECOND-STAGE SAMPLE OF VESSELS

Geographical area - Stratifying variables - Age and tonnage of vessel	Degrees of freedom	X^2	Probability value
I New England			
Age	9	7.630	$.70 > P > .50$
Tonnage	7	7.473	$.50 > P > .30$
II Gulf Area			
Age	7	7.107	$.50 > P > .30$
Tonnage	6	4.784	$.70 > P > .50$
III California			
Age	7	4.510	$.80 > P > .70$
Tonnage	5	13.897	$.02 > P > .01$

TABLE B-9

CHI-SQUARE ANALYSIS OF THE COMPLETED THIRD-STAGE SAMPLE OF VESSELS

Geographical area - Kind of insurance - Stratifying variables Age and tonnage of vessel	Degrees of freedom	X^2	Probability value
I New England			
A. Hull Insurance			
Age	4	5.7856	$.30 > P > .20$
Tonnage	6	4.6963	$.70 > P > .50$
B. Protection and Indemnity Insurance			
Age	4	.7752	$.95 > P > .90$
Tonnage	6	2.4750	$.90 > P > .80$
II Gulf Area			
A. Hull Insurance			
Age	3	3.8624	$.30 > P > .20$
Tonnage	3	.3081	$.99 > P > .95$
B. Protection and Indemnity Insurance a/			
III California			
A. Hull Insurance			
Age	4	.9055	$.95 > P > .90$
Tonnage	5	3.8390	$.70 > P > .50$
B. Protection and Indemnity Insurance			
Age	4	2.3221	$.70 > P > .50$
Tonnage	5	5.3505	$.50 > P > .30$

a/ Sample too small for chi-square analysis.

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